Natural Recovery of Persistent Organics in Contaminated Sediments at the Sangamo-Weston/Twelvemile Creek/Lake Hartwell Superfund Site – Phase II

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Task Order No. 09

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26 West Martin Luther King Drive
Cincinnati, Ohio 45268

Paul R. de Percin
Project Officer

Richard C. Brenner
Task Order Manager

Prepared by

Battelle
505 King Avenue
Columbus, Ohio 43201

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Dr. Victor S. Magar managed Battelle's overall effort with guidance and direction by Mr. Richard C. Brenner (EPA/NRMRL), and with extensive support from Ms. Jennifer A. Ickes, Mr. Eric A. Foote, Mr. James E. Abbott, and Ms. Regina M. Lynch (Battelle). PCB chemistry was conducted at the Battelle Ocean Sciences Laboratory in Duxbury, MA. Ms. Carole S. Peven-McCarthy managed this extensive effort. Ms. Linda S. Bingler, at the Battelle Marine Sciences Research Laboratory Sequim, WA, conducted ^{210}Pb and ^{137}Cs analyses and interpreted the age dating results. Polytopic vector analysis was conducted by Dr. Glenn W. Johnson (Energy and Geoscience Institute, Department of Civil and Environmental Engineering, University of Utah).

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ACRONYMS AND ABBREVIATIONS

ASTM	American Society for Testing and Materials
BCO	Battelle Columbus Operations
^{137}Cs	cesium-137 isotope
CD	coefficient of determination
cfs	cubic feet per second
CIRRUS	Climate Interactive Rapid Retrieval Users System
CO_2	carbon dioxide gas
DCM	dichloromethane
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DOC	dissolved organic carbon
dpm	disintegrations per minute
DUP	duplicate
EM	end-member
EPC	electronic pressure controlled
ERDC	Engineering Research and Development Center
FY	fiscal year
GC	gas chromatograph
GC/MS	gas chromatography/mass spectrometry
GF/C	glass microfiber filter, grade GF/C
GPC	gel permeation chromatography
GPS	Global Positioning System
HP	Hewlett Packard
HPLC	high performance liquid chromatography
IUPAC	International Union of Pure and Applied Chemistry
K-D	Kuderna-Danish
LCS	laboratory control sample
MDL	method detection limit(s)
MS	matrix spike
MSD	mass selective detector
N_2	nitrogen gas
NA	not analyzed or not applicable, as appropriate
N/A	not available
ND	not determined or not detected, as appropriate
N-Evap	nitrogen evaporation
NHC	National Hurricane Center

NOAA	National Oceanic and Atmospheric Administration
NRMRL	National Risk Management Research Laboratory
NS	not sampled
NS&T	National Status and Trends
OU	operable unit
^{210}Pb	lead-210 isotope
PAH	polycyclic aromatic hydrocarbon
PB	procedural blank
PCA	principal component analysis
PCB	polychlorinated biphenyl
PSD	particle-size distribution
PVA	polytopic vector analysis
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
r^2	correlation coefficient
^{222}Rn	radon-222
RIS	recovery internal standard(s)
RPD	relative percent difference
ROD	Record of Decision
SCDHEC	South Carolina Department of Health and Environmental Control
SERCC	Southeast Regional Climate Center
SIS	surrogate internal standard(s)
SIM	selected ion monitoring
SOP	Standard Operating Procedure
t-PCB	total PCB
TO	task order
TOC	total organic carbon
TOL	task order leader
TOM	task order manager
TSS/VSS	total suspended solids/volatile suspended solids
^{238}U	uranium-238
UHP	ultra high purity
USACE	United States Army Corps of Engineers
U.S. EPA	Unites States Environmental Protection Agency
WA	Work Assignment
WES	Waterways Experiment Station

EXECUTIVE SUMMARY

This technical report has been prepared in fulfillment of Contract No. 68-C-00-159, Task Order (TO) No. 09 by Battelle under the sponsorship of the U.S. Environmental Protection Agency's (EPA's) National Risk Management Research Laboratory (NRMRL).

The goal of this study was to achieve a better understanding of the natural mechanisms contributing to the recovery of polychlorinated biphenyl (PCB)-contaminated sediments at the Sangamo-Weston/Twelvemile Creek/Lake Hartwell Superfund Site (hereafter referred to as the Lake Hartwell Site). During a previously-reported Fiscal Year-2000 (FY-00) study between EPA/NRMRL and Battelle (Contract No. 68-C5-0075, Work Assignment No. 4-30), sediment cores were collected along the centerline from 10 Lake Hartwell Site transect locations identified in the EPA Record of Decision (ROD). The transect locations in order from north to south were Transects T16, W7, Q, P, O, N, L, J, I, and T6.

The first four transects (T16, W7, Q, and P) are located in the upgradient Twelvemile Creek portion of the site, whereas the last six (O, N, L, I, I, and T6) are located downgradient in the most northern sector of Lake Hartwell. For the FY-01 work presented in this report, a total of eight additional sediment cores were collected at three downgradient transect locations: three sediment cores were collected from T-O, three from T-L, and two from T-I. The cores were taken from shore to shore at each transect where possible. These additional cores were collected to better understand the historical deposition of PCBs and their historical dechlorination from lakeshore to lakeshore. This information provided a three-dimensional portrait of the site, as opposed to the previous two-dimensional understanding of the site (i.e., vertical profiles along the centerline of Twelvemile Creek and Lake Hartwell).

Additionally, 21 surface sediment samples and 9 high-volume water samples were collected from the Lake Hartwell Site and from the area near the former Sangamo-Weston Plant. The purpose of the surface sediment and high-volume water sampling was to identify the source of low-level PCBs entering the lake.

Cores were subdivided into 5-cm segments and analyzed for lead-210 (^{210}Pb), cesium-137 (^{137}Cs), PCBs, total organic carbon (TOC), and particle size distribution (PSD). Sediment ^{210}Pb and ^{137}Cs analyses were conducted to age date sediments and to determine sediment accumulation rates (cm/yr) and sedimentation rates (g/cm^2-yr). Detailed PCB congener analyses were performed on the 107 individual PCB congeners quantified by gas chromatography/mass spectrometry (GC/MS) analysis to identify vertical and lateral congener profiles and trends. Total PCB (t-PCB) concentrations were determined by summing the congener-specific concentrations for each core segment. Biphenyl also was measured in the sediments. Because biphenyl is not a PCB, biphenyl concentrations were not included in the t-PCB concentrations.

Transects O, L, and I were not noticeably impacted by the surface deposition of clean sediments released from upgradient impoundments, a phenomenon that was observed for the four upgradient transects in the FY-00 investigation. However, unlike the previous investigation, sand layers were found intermittently in some cores at T-O, T-L, and T-I, and at deeper locations within the profile. As expected, the highest concentrations of PCBs were associated with the silt and clay layers, whereas the sand layers contained very low PCB concentrations. In some cases, this stratification effect impacted the inverted bell-shaped data trend observed in most typical vertical PCB profiles. The sand layers also confounded the age dating analysis, making it impossible to date some cores, or making it possible only to date portions of a core.

Samples collected at C-1, located directly downstream from the Sangamo-Weston plant, had the highest PCB concentrations of the surface sediment samples. Two samples, C-1A (1,025 μg/kg) and C-1C (3,813 μg/kg), had t-PCB concentrations that exceeded the target concentration of 1 mg/kg. These were the only two surface sediment samples with concentrations exceeding the 1 mg/kg target concentration. Moving downstream from the Sangamo-Weston plant, the t-PCB concentration decreased at C-3 to 23 and 61 μg/g, then increased again at C-5 to 215 and 631 μg/g. Core samples collected at C-3 also had low t-PCB concentrations at deeper depths. The surface sediment samples collected furthest downstream, before Lake Hartwell, were collected in Twelvemile Creek at Highway 337 (Maw Bridge). The two surface sediment samples collected at this location, C-6A and C-6B, had t-PCB concentrations of 3.84 and 147 μg/g, respectively. The three deeper core samples at C-6; C-6C-1 (40-52 cm), C-6D-1 (5-12 cm), and C-6D-2 (20-27 cm); had t-PCB concentrations of 73, 442, and 11.05 ng/g, respectively.

The results from the PCB analyses for water revealed that particles greater than 0.7 μm were captured on the primary filter, and that these particles contained low levels of adsorbed PCBs. The accumulation of PCBs on the secondary (Empore™) filter is representative of soluble PCBs or PCBs adsorbed to particles less than 0.7 μm in size. For each sample, the majority of the mass was associated with the PCB fraction captured by the Empore™ filters.

Sediment accumulation rates (cm/yr) were used to calculate sedimentation rates (g/cm^2-yr), which are a measure of the mass of sediment deposited per year as opposed to the depth of sediment deposited per year. Cores T-O-B and T-L-B had the highest average sediment accumulation rates of the seven age dated cores. Sedimentation rates should be relatively constant and are not influenced by sediment compaction. Core T-L-B had the highest sedimentation rate of 5.50 g/cm^2-yr, and Core T-L-A had the lowest rate of 1.05 g/cm^2-yr.

To determine how quickly surface contaminant concentrations are approaching the target t-PCB concentration of 1.0-mg/kg t-PCB, sediment concentrations (mg/kg) were plotted against sediment depth for all eight cores. A logarithmic model using a best-fit curve was applied to the data. This analysis suggests that an additional 5.8 cm of sedimentation would be required in T-I-B to achieve a 1.0-mg/kg t-PCB concentration in the surface 5 cm. Not surprisingly, T-L-A, which already achieved the target 1.0-mg/kg t-PCB concentration, did not require additional sedimentation. This analysis also predicted that Cores T-O-A, T-O-C, T-L-B, T-L-C, and T-I-A, which had between 1.14 mg/kg and 2.47 mg/kg t-PCB in the surface 5 cm, also did not require additional sedimentation, which is clearly incorrect and is likely due to some inaccuracy in this approach. Lastly, this analysis could not be used for T-O-B due to the fact that an increase in t-PCB concentration was observed in the top portion of Core T-O-B.

The 1-mg/kg t-PCB goal has been achieved only in Core T-L-A. The 1-mg/kg t-PCB goal is expected to be achieved within 2 to 5 years in the vicinity of Core T-I-B. The 0.4-mg/kg t-PCB goal is expected to be achieved within 2 to 4 years in the vicinity of Core T-O-A, 3 to 5 years in the vicinity of Cores T-I-A and T-L-B, and 5 to 10 years in the vicinity of Core T-I-B. Lastly, the 0.05-mg/kg t-PCB goal is expected to be achieved within 6 to 9 years in the vicinities of Cores T-O-C and T-I-A, 8 to 10 years in the vicinity of Core T-L-B, 10 to 15 years in the vicinities of Cores T-O-A and T-I-B, and 12 to 15 years in the vicinity of Core T-L-A.

The HEC-6 model used for the ROD for the Sangamo-Weston/Twelvemile Creek/Lake Hartwell Superfund Site (U.S. EPA, 1994) to approximate sediment accumulation overpredicted sediment accumulation rates in the Transect O cores by a factor of approximately three times, and underpredicted rates in Transect I cores. Transect L was the only transect that had a model-estimated sediment accumulation rate closely matching the measured rate. These results were similar to what was found in the previous study at Lake Hartwell (Battelle, 2001b).

Comparison of the distribution of all measured PCB congeners (i.e., not just homologues) can provide a more detailed comparison of PCB distributions in surface and buried sediments. The PCB congener composition became increasingly dominated by lower-chlorinated congeners with sediment depth and corresponding age of the deposited sediments, which is consistent with changes observed in the homologue distribution profiles for the other core samples. A significant loss of tetra- (18%), penta- (23%), and hexachlorobiphenyl (14%) congeners occurred at depth (35-40 cm); however, mono- (8.3%), di- (36%), and trichlorobiphenyls (16%) accumulated.

The shift from higher- to lower-chlorinated congeners resulted in the accumulation of primarily *ortho*-chlorinated biphenyls, particularly 2,2′- and 2,6-dichlorobiphenyls, both of which have chlorines only in *ortho* positions; these two congeners experienced a combined 32% increase. The predominant trichlorobiphenyl to accumulate at depth also was an *ortho*-chlorinated biphenyl, with chlorines in the 2, 2′, and 6 positions (PCB 19). The only monochlorobiphenyl congener to have had a measurable increase was 2-chlorobiphenyl (PCB 1), also an *ortho*-chlorinated congener.

PCB congeners 66, 70/76, and 74 were the most significant tetrachlorobiphenyl congeners resulting in decreases. Of the pentachlorobiphenyls, congeners 95, 110, and 118 accounted for most of the decreases at a depth of 35-40 cm. PCB congeners 138/160/163 and 153 were the hexachlorobiphenyls that showed the most decrease at this depth, with percent changes of 4.0% and 2.4%, respectively.

The PCB congener compositional analysis revealed the same horizontal characteristics as the PCB homologue data; the upgradient locations had distributions and trends that were similar to the downgradient locations. The sediments close to the surface had a PCB congener distribution centered around higher-molecular-weight tetrachlorobiphenyls (approximately around PCB 66), but with significant contributions of key congeners ranging from di- through hexachlorobiphenyls. Major congeners (each generally comprising between 2 and 6 percent of the t-PCB) included the dichlorobiphenyl PCB 4/10; the trichlorobiphenyls PCB 16/32 and PCB 19; the tetrachlorobiphenyls PCB 41, PCB 47, PCB 49, PCB 52, PCB 66, and PCB 70/76; the pentachlorobiphenyls PCB 95, PCB 101/90, PCB 110, and PCB 118; and the hexachlorobiphenyls PCB 138/160/163, PCB 149, and PCB 153.

The PCB data generated for this study were modeled using the multivariate statistical method known as polytopic vector analysis (PVA). PVA is a valuable tool for chemical fingerprinting in complex multisource/multiprocess environmental systems. For this study, PVA was conducted to identify fingerprint (also known as end-member [EM]) compositions from the data generated for Lake Hartwell, and to compare the end members with literature-reported source patterns (e.g., Aroclor compositions and known PCB dechlorination or weathering patterns). This analysis was conducted by Dr. Glenn W. Johnson at the Energy and Geoscience Institute, Department of Civil and Environmental Engineering, University of Utah. Data analysis methods were conducted as outlined by Johnson et al. (2000; 2002).

PVA resolved four end-member patterns. Interpretation of end-member patterns was accomplished by comparison to reference data sets, including: (1) Aroclor compositions provided by Battelle; (2) Aroclor compositions reported by Frame et al. (1996); and (3) PCB patterns resulting from environmental fate processes such as dechlorination and volatilization (Chiarenzelli et al., 1997; Johnson and Chiarenzelli, 2000; Bedard and Quensen, 1995; Johnson and Quensen, 2000). The chemical composition, geographic/temporal distribution, and interpretations for each end-member fingerprint (EM-1, EM-2, EM-3, and EM-4) are discussed below.

The composition and distribution of End-Member 1 are nearly identical to the EM-1 pattern resolved in the 2000 model and are consistent with a mixture of Aroclors 1248 and 1254. Given that Sangamo-Weston used Aroclor 1242 but not 1248, the source of 1248 in EM-1 is interpreted as weathered Aroclor 1242 that lost some lower-chlorinated congeners through volatilization or dissolution.

This interpretation is supported by reports by Chiarenzelli et al. (1997) who reported that devolatilized Aroclor 1242 resembled Aroclor 1248.

The compositions of Aroclors 1016 and 1242 also are relatively similar, where both Aroclors are dominated by Cl-2, Cl-3 and Cl-4 homologues. This similarity suggests that the 1248 pattern also could be partly the result of weathered Aroclor 1016. Although Chiarenzelli et al. (1997) did not study Aroclor 1016 volatilization, Aroclors 1016 and 1242 are similar enough that they would likely weather similarly. Separating their individual contributions to EM-1 was not possible using the existing data set; thus, EM-1 likely represents a mixture of Aroclor 1254 with weathered residues of Aroclors 1242 and 1016, resembling a 40/60 mixture of Aroclors 1254/1248.

EM-1 was observed in high proportions primarily in surface sediment samples. This is consistent with the geographic and temporal distribution of this pattern described by Battelle (2001b) for cores collected during the 2000 sampling event. This further corroborates the hypothesis that EM-1 is characteristic of the PCB source from Sangamo-Weston.

End-Member 2 is analogous to the pattern resolved in the 2000 model. The congeners that make up EM-2 preferentially exhibit chlorines in the 2 and 6 (*ortho*) and 4 (*para*) positions. The dominant congeners are 2,2′/2,6-dichlorobiphenyl (PCB 4/10), 2-chlorobiphenyl (PCB 1), 2,2′,6-trichlorobiphenyl (PCB 19), and 2,2′,3/2,4′,6-trichlorobiphenyl (PCB 16/32). This is consistent with *Process C* dechlorination as described in the literature by Bedard and Quensen (1995) and Quensen et al. (1990). The inferred Aroclor 1242/1254 source in the study area and the dominance of *ortho*- and *para*-chlorines in EM-2 (i.e., the absence of congeners with chlorines in *meta* positions) suggest that EM-2 is a result of a microbial dechlorination process.

The highest EM-2 proportions were seen in the cores of Transect L and Transect I, where EM-2 approached 75% of the PCBs in the deeper and older sediments. The distribution of EM-2 in the surface sediments was much lower than EM-1, generally less than 10%. EM-2 was not a major contributor in surface sediments.

End-Member 3 is a new pattern that was resolved using the combined 2000 and 2001 data and is very similar to Aroclor 1242. The high proportions of PCB8/5, PCB16/32, PCB17, and PCB18 in EM-3 make this pattern more consistent with Aroclor 1242 than with Aroclor 1248. However, the principal difference between EM-3 and Aroclor 1242 is that EM-3 does not exhibit several low-chlorinated congeners characteristic of 1242: PCB1, PCB3 and PCB10. Thus, EM-3 is consistent with an Aroclor 1242 pattern that has been slightly weathered.

EM-3 was observed in highest proportions in three surface sediment samples from location C-1. This result is consistent with the following information: (1) C-1 was the sampling station closest to Sangamo-Weston (within 1 mile); (2) U.S. EPA (1994) reported that Sangamo-Weston used Aroclors 1242 and 1016; and (3) one would expect the least altered 1242 pattern to be found nearest its source. EM-3 was the only new pattern resolved as a result of sampling in 2001; samples from 2000 did not include sampling stations this close to Sangamo-Weston.

End-Member 4 is analogous to the EM-3 pattern resolved in the 2000 model. The congener pattern is characterized by dichloro-, trichloro-, and tetrachlorobiphenyls. Review of known dechlorination processes suggest that this pattern is related to *Process H′* dechlorination (Bedard and Quensen, 1995; Alder et al., 1993; Rhee et al., 1993). *Process H′* involves dechlorination of 2,3-, 2,3,4, and possibly 2,3,6-chlorobiphenyl groups from the *meta* (3 and 5) positions, and 3,4- and 2,4,5-chlorobiphenyls from the *para* (4) position.

EM-4 was observed in high proportions in samples from all cores and was relatively consistently observed throughout the surface sediments in Lake Hartwell. As an intermediate dechlorination congener pattern, it was not surprising to find EM-4 distributed throughout the sediment cores. These results suggest that most or all the sediments have undergone varying degrees of dechlorination historically.

The PCB congener composition of the surface water samples is shown in Figure 5-24. Only PCBs used in the PVA model are shown. Most other PCBs were very low or below detection, particularly the high-molecular-weight PCBs. The highest EM contributions in the aqueous samples were from the two relatively unaltered Aroclor patterns, namely EM-1 and EM-3, which represented the 60/40 Aroclor 1248/1254 mixture and Aroclor 1242, respectively.

The background samples (C-0, C-2, and C-4) had the lowest relative concentrations of low-molecular-weight PCBs, with only trace PCB concentrations of congeners below PCB28 (2,4,4′-trichlorobiphenyl). Closer to the former Sangamo-Weston plant (C-1 and C-3), the distribution more closely resembled EM-1, and PCBs were broadly distributed among mono-, di-, tri-, tetra-, and pentachlorobiphenyl congeners.

EM-2 (*Process C*) was observed in relatively high proportions (>35%) in the four samples located furthest downstream from the Sangamo-Weston plant in Twelvemile Creek (C-5 and C-6) and in Lake Hartwell (T-O and T-L). Direct inspection of the raw sample compositions indicates that these samples exhibit a congener pattern consistent with *Process C* dechlorination. Thus, the proportion of EM-2 and the relative accumulation of lower-molecular-weight PCBs appeared to increase with distance from the former Sangamo-Weston plant and with increased residence time in the river/lake ecosystem, suggesting that some dechlorination occurred during sediment transport through Twelvemile Creek and into the lake.

Extreme mixing from a major storm event would result in uniform concentrations in the t-PCB depth concentration profiles. Concentration profiles for cores taken during the previous study at Lake Hartwell (Battelle, 2001b) and the profiles for the cores in the present study were examined for signs of mixing throughout the cores. All cores except N and J in the previous study showed a steady increase in t-PCB concentration in the first 20 cm of each core, indicating that mixing was not likely. The t-PCB concentrations in Core J were inconclusive for mixing because the core was shallow (0-27 cm) and the concentrations were all less than 1.5 mg/kg. Concentrations in the first 20 cm of Core N varied slightly, but concentrations at 20 cm more than doubled.

Cores for the present study show no apparent mixing in Cores T-I-A, T-I-B, T-L-A, T-L-B, and T-L-C. Cores T-O-A and T-O-B show possible signs of mixing in the top 30 cm of each core, but the concentrations in these portions of the cores were relatively low. This variation in concentration could also be caused by variations in the concentrations of deposited material during recent years at these locations. If mixing did occur in Twelvemile Creek, then it did not appear to reach the highest PCB concentrations.

Because the top layers of most cores taken during both studies had relatively low t-PCB concentrations, it would take a huge storm event to cause the top 30 cm of sediments to be lifted in order for the highly contaminated sediments to be exposed and move downstream. It appears that, short of dam failure, no other scenario is catastrophic enough to expose the deep sediments.

1.0 DESCRIPTION OF TASK ORDER

This technical report has been prepared in fulfillment of Contract No. 68-C-00-159, Task Order (TO) No. 09 by Battelle under the sponsorship of the U.S. Environmental Protection Agency's (EPA's) National Risk Management Research Laboratory (NRMRL). The work was conducted at Battelle Memorial Institute, Columbus, OH, during the period of April 26, 2001 to September 30, 2002. EPA/NRMRL is interested in techniques to assess the mechanisms of natural recovery in contaminated sediments. This study focused on the natural recovery of polychlorinated biphenyl (PCB)-contaminated sediments at the Sangamo-Weston/Twelvemile Creek/Lake Hartwell Superfund Site (hereafter referred to as the Lake Hartwell site or simply Lake Hartwell) located in Pickens County, SC. Natural recovery studies were previously conducted by Battelle under EPA/NRMRL Contract No. 68-C5-0075, Work Assignment (WA) No. 4-30; these studies focused on natural recovery of polycylic aromatic hydrocarbon (PAH)-contaminated sediments at the Wyckoff/Eagle Harbor Superfund Site (Battelle, 2001a) and PCB-contaminated sediments at Lake Hartwell (Battelle, 2001b). The work described in this report adds to our understanding of sediment natural recovery at Lake Hartwell.

Mr. Richard C. Brenner was the EPA/NRMRL Task Order Manager (TOM) for this project. Dr. Victor S. Magar was the Battelle Program Officer and Task Order Leader (TOL) for this contract. The members of the Battelle project staff included Ms. Jennifer A. Ickes, Mr. Eric A. Foote, Mr. James E. Abbott, Ms. Carole S. Peven-McCarthy, Ms. Linda S. Bingler, and Ms. Regina M. Lynch. Dr. Glenn W. Johnson (Energy and Geoscience Institute, Civil and Environmental Engineering Department, University of Utah) provided technical assistance with the interpretation of PCB congener patterns using a polyvector analytical approach.

1.1 Background

The goal of this study was to achieve a better understanding of the natural mechanisms that contribute to the recovery of PCB-contaminated sediments at Lake Hartwell. Mechanisms that contribute to natural recovery include anaerobic and aerobic biotransformation/biodegradation of PCBs, which reduce the overall contaminant mass (Quensen and Tiedje, 1997); sorption onto organic particles, which reduces bioavailability (McGroddy et al., 1996); and sediment containment through natural capping, which acts as a natural barrier to protect the aquatic environment from contaminated sediments (Cardenas and Lick, 1996).

Natural attenuation of contaminated sediments relies on two primary mechanisms: (1) burial of contaminated sediments with clean sediments and (2) contaminant weathering. Sediment burial (capping) acts both to protect the water column from the vertical diffusion and advection of contaminants from near-surface sediments and to reduce contaminant transport into the food chain that can occur through bioturbation and bioaccumulation in surface or near-surface sediments. (Bioaccumulation/bioturbation were not investigated as part of this work assignment, but these mechanisms are recognized as important factors when considering sediment recovery.) PCB weathering, which includes such mechanisms as dilution, volatilization, biodegradation, and sequestration, can provide a permanent reduction in levels of PCB contamination and PCB chlorination. Biological reductive dechlorination under anaerobic conditions preferentially dechlorinates higher-chlorinated PCB congeners, transforming them to lower-chlorinated congeners. Other weathering processes such as dilution and volatilization preferentially remove lower-chlorinated PCBs that are more mobile. This study focused on evaluating natural sediment capping and contaminant weathering at the Lake Hartwell site. The contributions of the various potential weathering mechanisms were not examined separately, except by careful analysis of PCB congener profiles in aged sediments.

Lake Hartwell is an artificial lake located in the northwest corner of South Carolina, along the Georgia state line (Figure 1-1). It is bordered by Anderson, Pickens, and Oconee Counties in South Carolina and is bordered by Stephens, Franklin, and Hart Counties in Georgia. It was created between 1955 and 1963 when the U.S. Army Corps of Engineers (USACE) constructed Hartwell Dam on the Upper Savannah River, 7 miles from its confluence with the Seneca and Tugaloo Rivers. Lake Hartwell extends 49 miles up the Tugaloo and 45 miles up the Seneca at normal pool elevation, and covers nearly 56,000 acres of water with a shoreline of 962 miles. It is the second largest lake in South Carolina by volume, and the third largest lake in the state by surface area (South Carolina Department of Health and Environmental Control [SCDHEC], 1993).

The Sangamo-Weston plant was used for manufacturing electrolytic mica and power factor capacitors from 1955 to 1978 (U.S. EPA, 1994). The plant used a variety of dielectric fluids in its manufacturing processes, including fluids containing PCBs. Waste disposal practices included land burial of off-specification capacitors and wastewater treatment sludge on the plant site and at six satellite disposal areas. PCBs were discharged with effluent directly into Town Creek, a tributary of Twelvemile Creek, which is in turn a major tributary of Lake Hartwell. Between 1955 and 1977, the average quantity of PCBs used by Sangamo-Weston ranged from 700,000 to 2,000,000 lb/year. An estimated 3% of the quantities received and used by the plant were discharged into Town Creek, resulting in an estimated cumulative discharge of 400,000 lb of PCBs. An unspecified amount was buried in six off-site disposal areas. PCB use was terminated in 1977, prior to the EPA ban on its use in January 1978 (U.S. EPA, 1994).

The site was divided into two operable units (OUs). OU 1 addressed the land-based areas, which included the Sangamo-Weston land, and six satellite disposal areas. The land-based source of PCB contamination has been cleaned as part of the remediation of OU 1. OU 2 included sediments contaminated with PCBs that lie at the bottom of Lake Hartwell (Figure 1-1). This study pertains to the recovery of sediments in OU 2.

Three hydraulic/sediment impoundments exist on the lower section of Twelvemile Creek. Woodside II is the lowermost and largest impoundment. Woodside I is the middle impoundment. Both Woodside I and II are owned and operated by Consolidated Hydro of Greenville, SC, and produce a combined 2.5 million kW/yr. Both impoundments result in the accumulation of sediments from Twelvemile Creek. Historically, sediments have been released from the impoundments by opening sluice gates, resulting in the immediate discharge of sediment into Lake Hartwell (U.S. EPA, 1994). In 1984, for example, up to 20 ft of sediments were flushed from behind the lower and middle impoundments, and in 1993, an estimated 43,000 cubic yards of sediment were flushed from Woodside II. More effective sediment passing techniques to facilitate downstream sediment transport and mitigate short-term impacts on Lake Hartwell water quality and aquatic species are currently being evaluated by EPA Region 4.

The third, uppermost impoundment, formerly used for hydroelectric power, was purchased in 1962 by the Easley-Central Water District and is used as the intake point for the Easley-Central Water Plant. Approximately 6 ft of sediments are flushed from behind this impoundment quarterly.

The flushing of sediments from these three impoundments is expected to have impacted PCB concentrations in Lake Hartwell surface sediments. If impounded sediments were contaminated with PCBs, their release could have resulted in the release of PCB-contaminated sediments in Lake Hartwell. On the contrary, if the sediments were relatively clean, their release would have resulted in the development of a relatively clean sediment cap in portions of the lake.

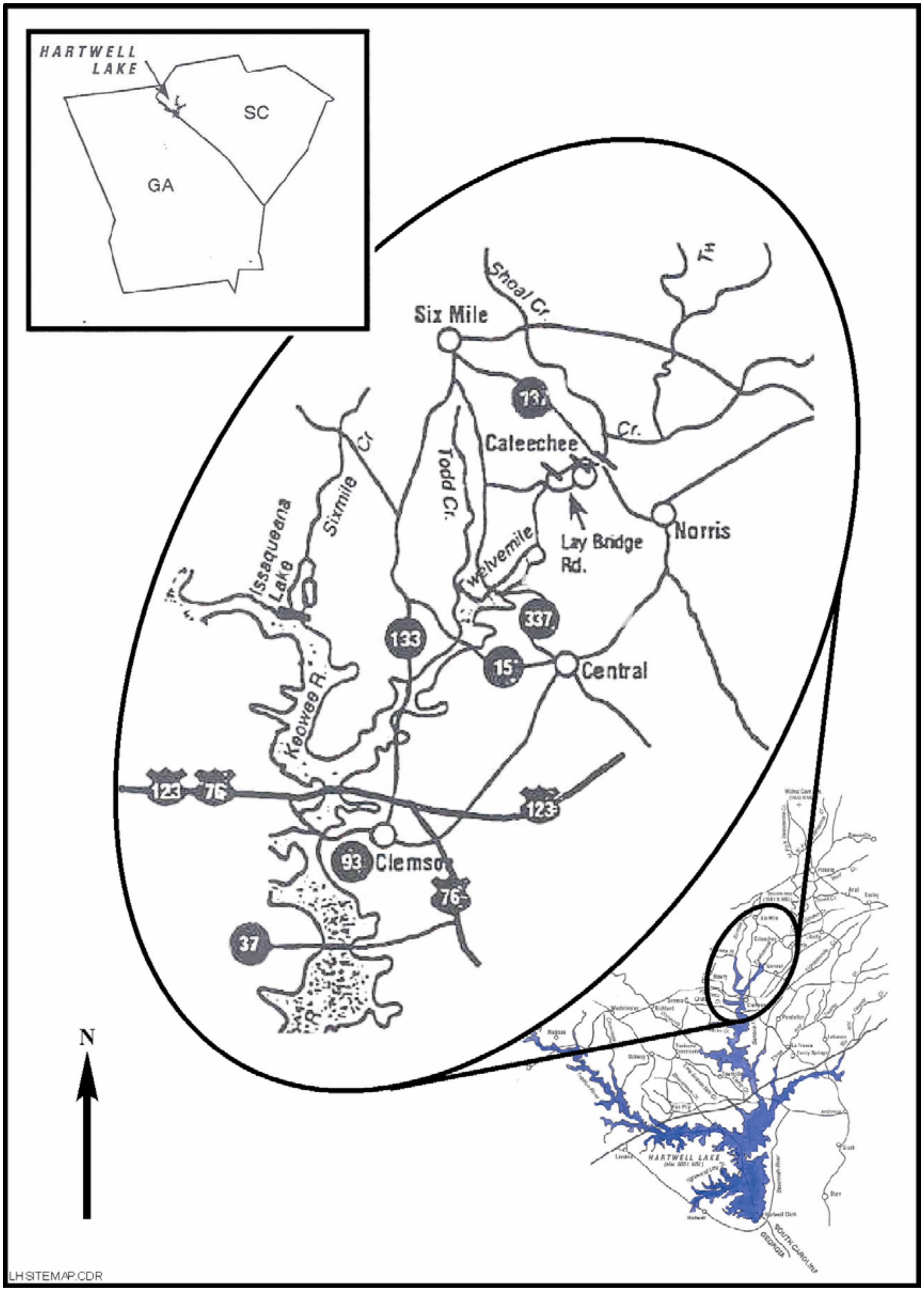

Figure 1-1. Lake Hartwell Site Map

1.2 Site Selection

During a November 4, 1999 site visit, EPA Region 4 and Battelle staff identified the Sangamo-Weston/Twelvemile Creek/Lake Hartwell Superfund Site as a suitable candidate to investigate natural recovery of PCB-contaminated sediments. The Lake Hartwell site was originally selected for the FY-00 study for the following reasons:

- The site had a documented history of contaminated sediments, primarily from waste disposal practices from the manufacturing plant. Understanding the source of PCB contamination made it easier to discern the magnitude and extent of dechlorination.

- Modeling of both the clean sediment deposition rate and the recovery of fish and benthic organisms was conducted by EPA and the USACE Waterways Experiment Station (WES) (U.S. EPA, 1994). The model results suggested that sediment natural recovery should effectively protect human health and the environment through burial of contaminated sediments by clean sediments.

- A 5-year review of natural recovery was underway during the first phase of the study. EPA Region 4 and USACE have expressed interest in this study and agreed to support the field efforts with data exchange and technical support.

- The site was well characterized, providing a large database of information to select appropriate study locations and provide a history of sediment contamination.

1.3 Project Objectives

During a previously reported FY-00 study (WA No. 4-30), sediment cores were collected, segmented into 5-cm segments, and analyzed for PCBs, lead-210 isotope (^{210}Pb), cesium-137 isotope (^{137}Cs), total organic carbon (TOC), and particle-size distribution (PSD) (Battelle, 2001b). Sediment cores were collected at 10 predetermined transects that corresponded to transects identified by EPA Region 4 and USACE for long-term monitoring of OU 2. Cores were extruded into 5-cm or 10-cm increments. Core transects were located over a distance of approximately 2 miles along the centerline of Twelvemile Creek (four samples) and Lake Hartwell (six samples). The results contributed valuable insight regarding the rates of clean sediment deposition and reduction in surface sediment PCB concentrations along this centerline sampling traverse in the deepest areas of the creek.

For the FY-01 work presented in this report, a total of eight additional sediment cores were collected at three transect locations: Transects O, L, and I (T-O, T-L, and T-I, respectively). Three cores were collected from T-O, three from T-L, and two from T-I. The cores were collected from shore to shore at each transect where possible. The purpose of these additional cores was to better understand the historical deposition of PCBs and their historical dechlorination from shore to shore of the lake. This information provided a three-dimensional portrait of the site, as opposed to the previous two-dimensional understanding of the site (i.e., vertical profiles along the centerline of the lake).

Additionally, 21 surface sediment samples and nine high-volume water samples were collected from Lake Hartwell and from the area near the former Sangamo-Weston Plant. The purpose of the surface sediment and high-volume water samples was to identify the source of low-level PCBs entering the lake.

The primary objective of TO No. 09 was to expand the investigation, initiated under WA No. 4-30, of natural recovery processes for the remediation of PCB-contaminated sediments at the

Sangamo-Weston/Twelvemile Creek/Lake Hartwell Superfund Site. The following tasks were conducted and are addressed in this report:

- Task 1. Sediment coring
- Task 2. Surface sediment sampling and high-volume water sampling
- Task 3. Sediment laboratory analysis: PCBs, ^{210}Pb, ^{137}Cs, PSD, and TOC
- Task 4. High-volume water filter laboratory analyses: PCBs, and total suspended solids (TSS)/volatile suspended solids (VSS)
- Task 5. Data analysis.

Task 1 was conducted during May 2001. Sediment coring involved taking eight sediment cores and extruding them in the field into 5-cm segments for PCB, age dating, PSD, and TOC analyses.

High-volume water sampling and surface sediment sampling were performed during Task 2. The high-volume water samples were used to concentrate PCBs in Lake Hartwell surface water and in Twelvemile Creek, so that ultra-low PCB concentrations in water samples could be measured. The surface sediment samples in Twelvemile Creek were collected to identify whether a residual PCBs exists along the creek bed.

For Task 3, PCB, ^{210}Pb, ^{137}Cs, TOC, and PSD analyses were conducted for each 5-cm sediment core segment. PCB compounds were characterized to identify the source of contamination and the magnitude and extent of historical PCB weathering to date. Of the 209 possible PCB congeners, approximately 107 congeners were identified and measured. Relative changes in PCB distributions (e.g., a relative change between low- and high-chlorinated PCBs) were used to evaluate the degree of PCB dechlorination and weathering.

Sediment ages were assigned to the extruded intervals in each sediment core based on the relative concentrations of ^{210}Pb and ^{137}Cs. ^{210}Pb is a naturally occurring uranium series radionuclide produced in the atmosphere by the decay of terragenic radon-222 (^{222}Rn), which is a gas produced by natural radium-226 in rocks and soils (Robbins and Edington, 1975; Brugam and Carlson, 1981). ^{137}Cs occurs in the atmosphere due to fallout from historical nuclear testing. ^{210}Pb and ^{137}Cs are removed from the atmosphere through precipitation scavenging and rapidly incorporated into sediments through particle settling, resulting in relatively short residence times in natural waters (Schroeder, 1985). The sequestered ^{210}Pb and ^{137}Cs decay with half-lives of 22.3 years and 30 years, respectively, so that in a constantly accumulating sediment environment the activity of these isotopes show exponential declines with increasing depth according to an exponential (first-order) decay equation for the radionuclides (Brugam and Carlson, 1981; Robbins and Edington, 1975; Schroeder, 1985). PSD (i.e., grain-size analysis) was used to support the assumption that uniform sedimentation processes occurred during the time period of interest. The magnitude of the excess ^{210}Pb concentration together with the precision of the analytical method for this nuclide limits the range of dating by this method to 100 to 200 yr before the present (Robbins and Edington, 1975). The use of the ^{137}Cs nuclide is limited to the early 1950s, at the onset of aboveground nuclear weapons testing.

For Task 4, PCB and TSS/VSS analyses were conducted on the high-volume water sample filtrates.

For Task 5, the results of this study were analyzed to identify historical PCB depositional patterns, PCB weathering patterns, (e.g., dechlorination), PCB end members (e.g., fingerprint patterns), and sediment age dating.

2.0 FIELD SAMPLING AND ANALYTICAL METHODS

This section describes field sampling methods and PCB, ^{210}Pb, ^{137}Cs, TOC, and PSD analytical methods. Field and analytical methods were conducted in accordance with an EPA-approved Quality Assurance Project Plan (QAPP) for this study (QAPP I.D. No. 163-Q4-0) (Battelle, 2001c), which is an addendum to QAPP I.D. No. 163-Q2 (Battelle, 2000).

The experimental design is described in Section 3.0 of the QAPP (Battelle, 2001c). The work included the following four technical tasks: sediment coring; surface sediment sampling and high-volume water sampling; sediment laboratory analysis for PCBs, ^{210}Pb, ^{137}Cs, PSD, and TOC; high-volume filter laboratory analysis for PCBs and TSS/VSS; and data analysis.

2.1 Sediment Coring

Eight sediment cores were collected from three transect locations in Lake Hartwell. Table 2-1 summarizes sample coordinates, sediment core lengths, and water depths at each core location. Coring locations are shown in Figure 2-1. A pontoon vessel was used as the sampling platform during sediment coring operations for all sample sites. Sediment cores taken from the pontoon were collected using a corer equipped with 7.6-cm-diameter butyrate sleeves (Figure 2-2) and a mechanical vibrator to drive the cores to a minimum depth of 100 cm. Cores were collected by Athena Technologies, Inc. (Columbia, SC), a Battelle subcontractor.

All cores were collected at predetermined river transects (Figure 2-1) originally established by EPA Region 4 and USACE under the site's ongoing annual monitoring program; these transects were sampled under WA No. 4-30. A real time Global Positioning System (GPS) was used during sample collection.

Table 2-1. Lake Hartwell Sample Coordinates and Core Depths

Sample ID	Northing	Easting	Core Length (cm)	Water Depth (m)
		Coring Locations		
T-O-A	634054.90948	1455620.52530	108	3.75
T-O-B	634054.90948	1455620.52530	95	3.20
T-O-C	634196.49435	1455525.93217	146	3.81
T-L-A	630078.82438	1451265.82503	127	3.50
T-L-B	630313.08745	1451230.36506	157	6.03
T-L-C	ND	ND	150	6.25
T-I-A	625185.54710	1446392.22065	127	8.53
T-I-B	625268.73974	1445622.89171	127	9.45
		Surface Sediment Sample Locations		
C-0	692516.39731	1487111.05758	NA	NA
C-1	692077.19889	1483187.66731	NA	NA
C-2	695792.94233	1478752.06926	NA	NA
C-3	680866.86402	1476496.00341	NA	NA
C-4	681271.13347	1482420.73404	NA	NA
C-5	651185.02867	1468059.61097	NA	NA
C-6	638909.38794	1458914.44222	NA	NA

NA = not applicable.
ND = not determined.

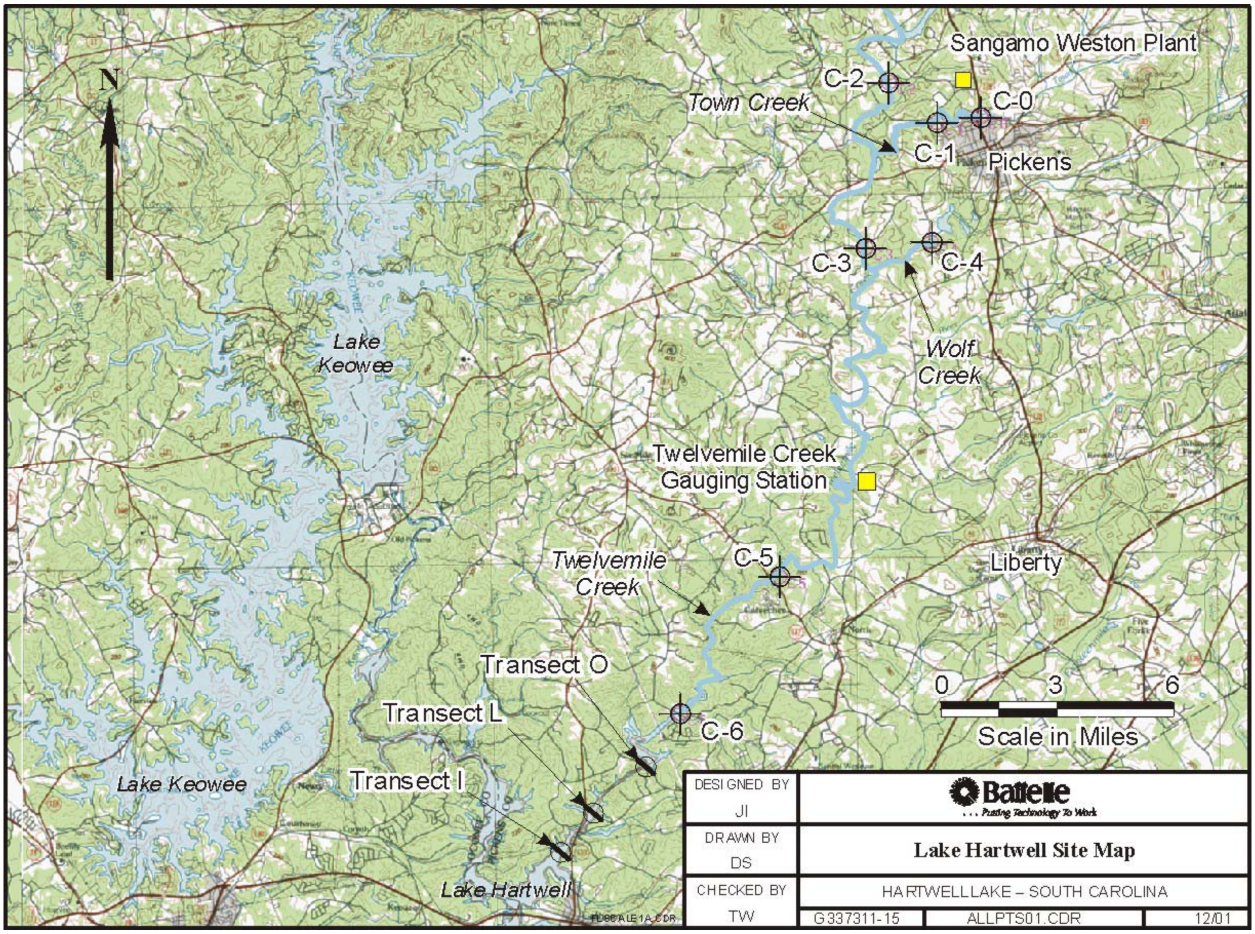

Figure 2-1. Lake Hartwell Coring Locations and Historical Transect Locations

Figure 2-2. Lake Hartwell Core Sampling

2.1.1 Sediment Extruding, Sectioning, and Sample Identification. Cores were extruded on shore, and extruded samples were sent to their respective laboratories. Each core was extruded into 5-cm increments by horizontally slicing the core with a fine-blade hacksaw. The 5-cm segments were divided into three pie segments for analysis using a "pie cutter" that divided the segments into predetermined ratios for off-site analyses. PCB analyses were conducted at the Battelle Ocean Sciences Laboratories in Duxbury, MA (Battelle-Duxbury); ^{210}Pb and ^{137}Cs analyses were conducted at the Battelle Marine Research Laboratories in Sequim, WA (Battelle-Sequim); TOC analyses were conducted at Battelle Columbus Operations (Battelle-Columbus); and PSD analyses were conducted by Soil Technology Inc, Bainbridge, WA. Chain of custody was conducted in accordance with the QAPP (Battelle, 2001c). Chain of custody forms, extruded sediment identification codes generated for each sample and each laboratory, and the extruded sediment intervals are shown in Appendix A. Samples were identified by transect for Transects O, L, and I (i.e., T-O, T-L, or T-I, respectively), by location within each transect (e.g., for Transect O, T-O-A, T-O-B, and T-O-C), and by segment depth, beginning with the number 1 for the most shallow surface sediment sample. Thus, T-O-A-1 was the surface-most sediment sample (0-5 cm depth) taken from core location T-O-A, and T-O-A-4 was the fourth sediment sample from the surface (15-20 cm depth) taken from the same location. Field notes identified the depth intervals.

2.1.2 Sampling Equipment Decontamination. All sampling equipment was decontaminated before arrival at the site. Following the collection, inspection, and segmentation of a sediment core, the sampling equipment underwent a decontamination process if it was to be used for additional sampling. The bulk of any sediment material adhering to the coring equipment was scraped from the equipment into a containment bucket. The contents of the containment bucket were held for proper disposal. When segmenting samples, the hacksaw and pie cutter were rinsed with deionized water between samples.

2.1.3 Surface Sediment and Water Samples for Lake Hartwell. Surface sediment and water samples were collected at the locations identified in Figure 2-1 and Table 2-1. Nine high-volume water samples, 16 surface sediment samples, and five surface sediment core samples were collected. Sampling locations for these parameters corresponded with former *Corbicula* clam sample locations previously deployed by U.S. EPA Region 4 (RMT Inc., 1999). Two surface sediment samples were collected from each of the C-0, C-1, C-2, C-3, C-4, C-5, and C-6 locations and labeled with the sample location and A or B for consecutive samples. The two samples were taken from different areas of the creek bed, generally one in the middle of the creek and one sample closer to the shoreline. At location C-1, which is located directly downstream from the Sangamo-Weston Plant, four surface sediment samples were collected, labeled C-1A through C-1D.

Surface sediment samples at each location were collected in two 8-oz glass jars with Teflon™-lined lids (Figure 2-3a). One sample was shipped directly to Battelle-Duxbury for PCB analysis and associated dry weight analyses. The other sample was shipped to Battelle-Columbus for TOC analysis, and an aliquot of the sediment was removed and shipped to Soil Technology Inc. (Bainbridge Island, WA) for PSD analysis.

Five surface sediment core samples were collected in 7.6-cm-diameter butyrate sleeves that were cut to approximately 60 cm (Figure 2-3b). These samples were collected at *Corbicula* sample locations C-3 and C-6. These cores were extruded using the same method for the longer cores, but only silt/clay layers and the bottom 5 cm of the cores were saved for analysis.

Nine high-volume water samples were collected from Lake Hartwell (Figure 2-4) and shipped to Battelle-Columbus for processing. Sample locations for the high-volume water samples corresponded with the *Corbicula* basket sampling locations and USACE transect locations identified in previous investigations. Each sample consisted of approximately 20 L of water collected at locations C-0, C-1, C-2, C-3, C-4, C-5, and C-6. In addition to these samples, one 20-L water sample was collected at T-O

Figure 2-3. Collection of Surface Sediment Samples in (a) Glass Jars and (b) 7.6-cm-Diameter Butyrate Sleeves

Figure 2-4. Sample Collection for High-Volume Water Samples

and 60 L was collected at T-L. The 60-L sample volume collected at T-L provided enough water volume to analyze one 20-L reference sample and an additional 20 L each for a duplicate sample analysis and sample matrix spike analysis.

The 20-L of water from each location was collected in five 4-L amber bottles with Teflon™-lined lids using a peristaltic pump equipped with Teflon™-lined polyethylene tubing. For T-L, the additional volume required for quality assurance resulted in the collection of 15 bottles. Additional 1-L water samples were collected in parallel from each sample location in 1-L plastic Nalgene™ bottles. These samples were shipped to the Battelle-Columbus for TS/VSS analyses.

At sample locations C-0, C-1, C-2, C-3, C-4, C-5, and C-6, the water level was shallow (approximately 60 cm deep) and the tubing was placed approximately 30 cm above the sediment surface, taking care not to disturb the sediment during sample collection (Figure 2-4). For T-O and T-L, water was collected near the middle (shoreline to shoreline) of the transects. Water was pumped from approximately 1 m above the sediment surface on the upstream side of the pontoon sampling vessel. After each sampling event, the Teflon™ tubing was discarded and replaced with new tubing.

Water samples were transported to Battelle-Columbus, where they were filtered using modified U.S. EPA Method 608 ATP 3M0222 using the apparatus shown in Figure 2-5. Groups consisting of two or three of the five 4-L sample bottles were randomly selected from holding and composited into a 10-L stainless steel reservoir. The container was pressurized to approximately 15 psi using ultra-high-purity (UHP) nitrogen gas (N_2), and the lake water sample was driven out of the container and directed through an inline disk assembly that independently housed two filters in series. The first filter consisted of a 140-mm fiberglass membrane (0.7-µm pore size) to remove particulates; the second filter in series was comprised of a 90-mm Empore™ extraction disk (3M, Minneapolis/St. Paul, Minnesota) to trap dissolved and colloidal (<0.7 µm) PCBs (Figure 2-6). Teflon™-lined polyethylene tubing was used to avoid the possibility of desorbing or dissolving tubing materials into the water samples. The filter effluent was discharged into a calibrated carboy. A total of 20 L of water was filtered per sample location. The 20-L samples were filtered in two 10-L increments to accommodate the size of the filter apparatus.

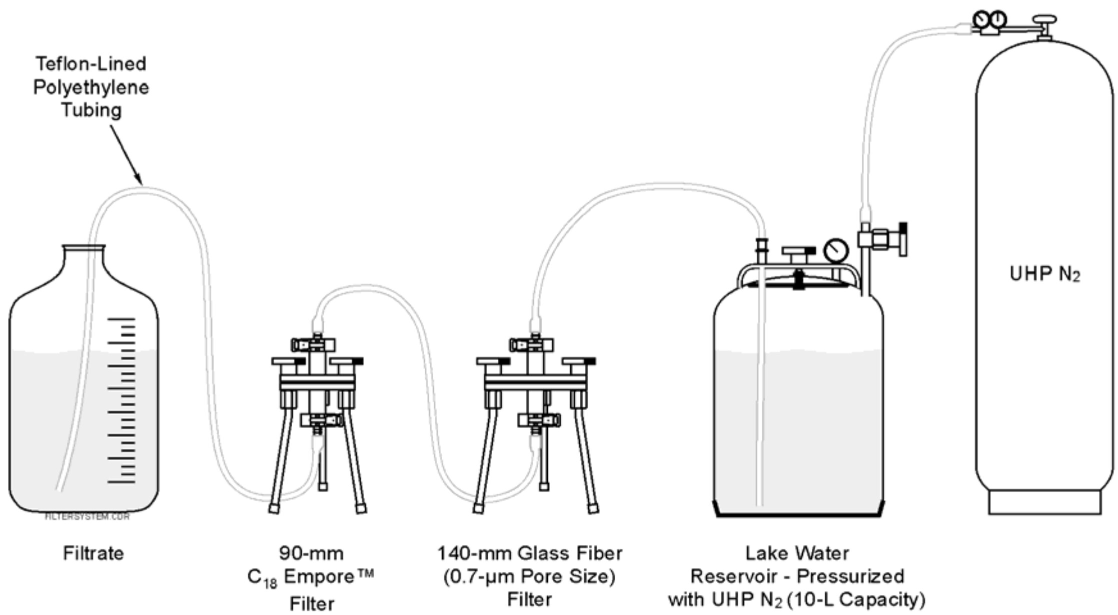

Figure 2-5. High-Volume Water Sample Filtration Setup

The sample duplicate was composited and processed using the same procedure described above. The sample matrix spike consisted of 19.5 L of sample water and 500 mL of a matrix spike solution prepared by Battelle-Duxbury. The laboratory control sample (LCS) consisted of 19.5 L of Milli-Q™ water (18 Mohm) and 500 mL of the matrix spike solution.

When filtering was complete, each filter was removed and independently transferred into a 500-mL amber glass bottle with a Teflon™-lined lid. The filters were shipped to Battelle-Duxbury where they were cut into fine pieces before extraction to maximize their exposure to the extraction solvent. The glass fiber filter and Empore™ disk for each sample location were extracted and analyzed for PCBs separately to independently measure PCBs on the particulate material trapped on the fiberglass disk and sorbed on the embedded carbon matrix of the Empore™ extraction disks.

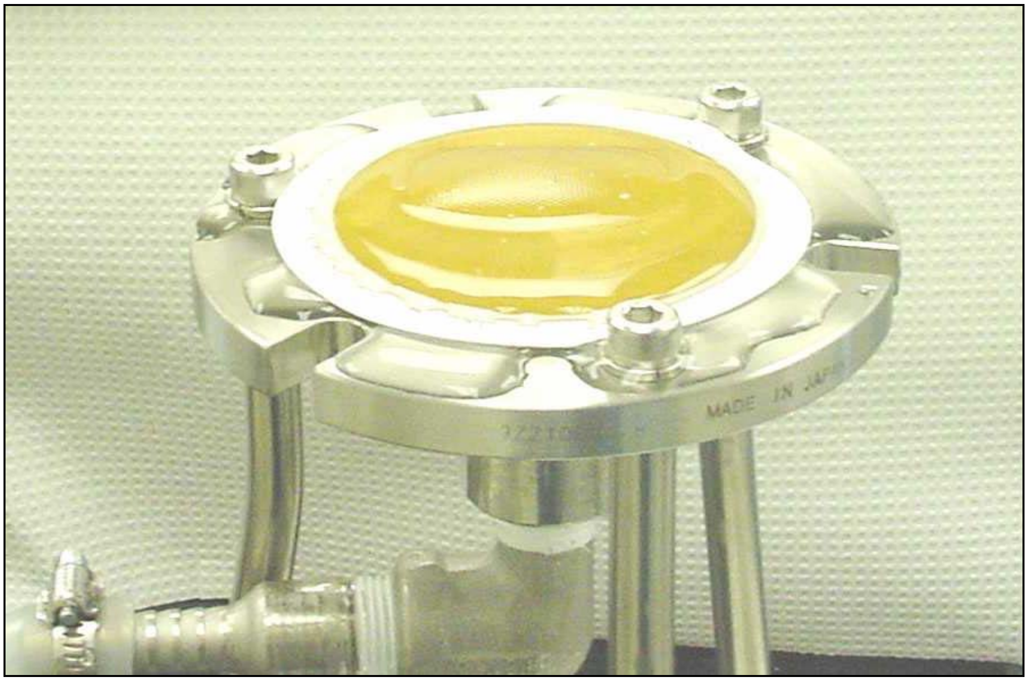

Figure 2-6. Photo Showing Empore™ Filter After 0.7-μm Glass Fiber Filtration. (The photo shows filtered inorganic and organic solids [<0.7 μm] on the Empore™ filter.)

2.1.4 Field Observations. Field observations such as QAPP deviations or unusual circumstances that could affect data validity were recorded on site and are reported in this section.

Sediment Coring Locations: The QAPP (Battelle, 2001c) called for the collection of five sediment cores at T-L, but because of difficulty in collecting five cores across T-L, only three cores were collected. The remaining two cores were collected at T-I, located downstream from T-L, based on agreement between Battelle and the EPA TOM; T-L and T-I exhibited similar PCB depositional characteristics during the previous study at Lake Hartwell (Battelle, 2001b). Only three cores could be collected from T-L because the field team encountered saprolite, a deposit of original clay and disintegrating rock, near the T-L shore. Near the shoreline, the sediment layer above the saprolite had insufficient depth to sample or core; sediment depth increased with increasing distance from the shore.

2.2 Sediment Age Dating

Battelle-Sequim age dated the sediments from the eight cores collected from the Lake Hartwell site. The sediment age dating was conducted using ^{210}Pb or ^{137}Cs analyses as described by Koide et al. (1973) and Battelle (2001c).

^{210}Pb and ^{137}Cs isotopes are relatively common in sediments and typically are used to determine the age of the sediments over years, decades, or centuries. This type of dating relies on two simplifying assumptions: (1) the sediments to be aged have a relatively uniform grain distribution with depth; and (2) the sediments had a relatively constant historical annual deposition rate. As much as possible, these conditions were confirmed visually during the initial inspection of the sediment cores and using PSD results. The PSD results were used to determine the percentage of clay, silt, sand, and gravel in the sediments and to assess the uniformity of the sediment samples.

^{210}Pb and ^{137}Cs analyses were conducted in accordance with the previous QAPP (Battelle, 2000). Approximately 3.0 g of sediment was used for each ^{210}Pb analysis. The wet sediment taken from the core segments was manually homogenized in clean glass or plastic bowls. The wet sediment was weighed and then freeze-dried (see Standard Operating Procedure [SOP] MSL-C-003-00, Appendix D, of the QAPP) to remove moisture prior to sample analysis and to permit the determination of percent solids. Approximately 3.0 g of dry sediment underwent acid digestion followed by plating onto silver disks for ^{210}Pb analysis using the alpha-counting technique described by Koide et al. (1973) (see SOP MSL-M-6, Appendix E, of the QAPP). This measurement was used to age date sediment samples.

^{210}Pb and ^{137}Cs analytical results and age dating calculations are reported in Appendix B. Although all of the sediment core segments were analyzed for ^{210}Pb, cores whose PSD analyses showed nonuniform historical sediment deposition could not be age dated. The ^{210}Pb concentration profiles for these cores are reported, but their dates are not. Based on the observed sedimentation patterns, all cores but T-O-B could be dated. ^{137}Cs dating was conducted for only 15 samples, because ^{137}Cs results were used only to supplement the ^{210}Pb data. Results are included in Appendix B of this document.

Soil Technology, Inc. (Bainbridge Island, WA) conducted PSD in support of the age dating analysis. PSD was determined according to American Society for Testing and Materials (ASTM) D422-*Standard Method for Particle-Size Analysis of Soils*. Data were reported as weight percentages of gravel (>4.74-mm diameter), sand (2-mm to 0.0625-mm diameter), silt (0.0625-mm to 4-µm diameter), and clay (<4-µm diameter). TOC was determined according to U.S. EPA Method 9060-*Total Organic Carbon*. Results are included in Appendix B.

2.3 PCB Analyses

Sediment samples were prepared for PCB chemical analysis according to modified U.S. EPA SW-846 Methods 3550, 3611, and 3660. The Battelle SOP 5-190-05 (*Tissue and Sediment Extraction for Trace Level Semi-Volatile Organic Contaminant Analysis)* for this extraction method can be found in Appendix B of the previous QAPP (Battelle, 2000). This method and any modifications are briefly described in the following paragraphs.

Approximately 30 g (wet weight) of the homogenized sediment samples was weighed into an appropriate sample container for extraction. (An additional ~10-g aliquot was dried for percent moisture determination as described at the end of this section.) The appropriate concentrations of surrogate internal standards (SIS) were added to the samples to allow accurate measurement of target organic compounds. The SIS compounds were PCB 14, PCB 34, PCB 104, and PCB 112.

Anhydrous sodium sulfate was added to absorb water from the samples and facilitate the extraction with an organic solvent. The sediment homogenates were shaken/tumbled for a minimum of 12 hours with 100 mL of hexane. The sample/solvent was centrifuged, and then the solvent was decanted into precleaned, labeled, Erlenmeyer flasks. The same sediment underwent a second 100-mL solvent extraction and was shaken/tumbled for a period of at least 1 hour. A third and final 100-mL extraction was conducted for another 1-hour shake/tumble period. The combined extracts were dried over sodium sulfate and reduced to ~1 mL by using Kuderna-Danish (K-D) concentration and/or nitrogen evaporation (N-Evap) techniques.

The concentrated extract was solvent exchanged into dichloromethane (DCM) and processed through a 20-g alumina (2% deactivated F20) column to obtain a moderately purified PCB extract. The PCB fraction was eluted from the alumina column with 100 mL of DCM and concentrated to 1 mL using K-D and/or N-Evap techniques.

The concentrated extracts were treated with activated granular copper to complex sulfur. The extract volumes then were measured exactly with a syringe, and the entire extract fractionated by high performance liquid chromatography/gel permeation chromatography (HPLC/GPC) (Battelle SOP 5-191, *HPLC Cleanup of Sample Extracts for Semi-Volatile Organic Pollutants*) to isolate the PCBs from potential interferents. Final extracts were spiked with appropriate concentrations of recovery internal standard (RIS) containing PCB 36, PCB 96, PCB 103, and PCB 166.

The following quality control samples were processed along with each batch of 20 sediment samples:

1 LCS
1 procedural blank (PB)
1 duplicate (DUP)
1 matrix spike (MS).

Splits of the sediment extracts were analyzed for the concentration of 107 PCB target analytes using a modified version of U.S. EPA SW-846 Method 8270. This method employed high-resolution capillary gas chromatography with low-resolution mass spectrometry (GC/MS). The analytical system was comprised of a Hewlett Packard (HP) 6890 gas chromatograph (GC) equipped with an electronic-pressure-controlled (EPC) inlet and an HP 5973 mass selective detector (MSD) operating in the selected ion monitoring (SIM) mode. A minimum five-point response factor calibration was run with analyte concentrations in the standard solutions ranging from approximately 0.01 ng/μL to approximately 10 ng/μL. The samples were bracketed by passing standard checks analyzed no less frequently than every 10 samples and at the completion of each sequence.

Total PCB concentrations were determined as the sum of the individual PCB congeners. The 107 target analytes are listed in Table 2-2, along with their respective International Union of Pure and Applied Chemistry (IUPAC) numbers. Full PCB congener names associated with the IUPAC numbers are provided in Appendix C. The available method detection limits (MDL) for the PCB congeners in sediment and aqueous matrixes were identified in the QAPP (Battelle, 2000) and are shown in Appendix D with a quality assurance/quality control (QA/QC) summary of the data. The IUPAC numbering system and nomenclature for PCBs are used throughout this document, particularly in figures where space does not permit printing congener names.

The moisture content of each sediment sample was determined using a modified version of ASTM Method D2216. For each sediment sample, approximately 5-10 g of sediment were placed in preweighed, aluminum weighing pans. The weights were recorded (initial weight), and the pans were placed in a drying oven at 110 ± 5°C. The samples were dried to constant weight (overnight), cooled in a desiccator for at least 30 minutes, and weighed (dry weight). The sediment moisture content was calculated as [1 − (dry wt/initial wt)] × 100%. The percent dry weight was calculated as (dry wt/initial wt) × 100%.

The laboratory-reported PCB concentrations for each extracted sediment sample are provided in Appendix E. Congener histograms are based on PCB congener concentrations normalized to total PCB concentrations, plotted as percent total PCBs.

Table 2-2. Target PCB Congeners Based on IUPAC[(a)] Nomenclature

IUPAC No.	Number of Chlorines	IUPAC No.	Number of Chlorines	IUPAC No.	Number of Chlorines
1	1	**66**	4	**151**	6
3	1	70/76	4	**153**	6
4/10	2	74	4	156	6
6	2	82	5	158	6
7/9	2	83	5	167	6
8/5[(c)]	2	84	5	169	6
12/13	2	85[(b)]	5	**170/190**	7
16/32	3	**87/115/81**	5	171/202	7
17/15	3	89	5	172	7
18	3	91	5	173	7
19	3	92	5	174	7
21	3	95	5	175	7
22	3	97	5	176	7
24/27	3	99	5	177	7
25	3	100	5	178	7
26	3	**101/90**	5	**180**	7
28	3	**105**	5	**183**	7
29	3	107/147	5	184	7
31	3	**110/77**	5	185	7
33/20	3	114[(b)]	5	**187/182**	7
40	4	**118**	5	189	7
41/64/71	4	119	5	191	7
42/37	4	124	5	193	7
43	4	**128**	6	194	8
44	4	129/126	6	**195/208**	8
45	4	130	6	197	8
46	4	131	6	198	8
47/75	4	132	6	199	8
48	4	134	6	200	8
49	4	135/144	6	201/157	8
51	4	136	6	203/196	8
52	4	137	6	205	8
53	4	**138/160/163**	6	**206**	9
56/60	4	**141/179**	6	207	9
59	4	146	6	**209**	10
63	4	149/123	6	—	—

(a) All congener numbers are listed using the IUPAC nomenclature for PCB congeners. Co-eluting congeners are listed in order of abundance in Aroclors 1242/1248/1254 (most abundant listed first). The most abundant single congener was used to calibrate the instrument for the co-eluting congener sets. IUPAC congener names are identified by number in Appendix C.

(b) The pesticide 4,4-DDD co-elutes with congener 114, and the pesticide 4,4-DDE co-elutes with congener 85.

(c) The **bolded** congeners include the 18 congeners from the National Oceanic and Atmospheric Administration (NOAA) National Status and Trends (NS&T) method, and the 19 congeners from EPA Method 8082.

2.4 PSD, TOC, and TSS/VSS Analyses

TOC and PSD analyses were performed on each surface sediment sample and core segment. TSS/VSS analyses were conducted on the 1-L water samples that were collected in parallel with the high-volume water samples. PSD and TOC results are presented in Section 6, Tables 6-1 through 6-8. The laboratory-reported PSD, TOC, TSS, and VSS data are provided in Appendix B.

A total carbon analyzer (UIC, Inc., Chicago, IL) was used to determine sediment TOC. The method consisted of sample combustion and coulometric titration using a method adapted from the instrument manual. A 10-g aliquot of the sediment sample was oven-dried at 125°C and crushed using a pestle and bowl after drying. Triplicate samples of approximately 35 mg each of the processed, dried sediment was transferred into a platinum ladle and placed into the combustion oven. The sample was burned at a temperature of 500°C to selectively oxidize the organic forms of carbon. The combustion product gases were swept through a barium chromate catalyst/scrubber to ensure complete combustion of the sample to carbon dioxide (CO_2). The CO_2 gas was swept to the coulometer where it was detected by automatic, coulometric titration. The digital display provided results in mg of carbon per sample.

PSD analysis was performed using ASTM D-422. This method employed sieves for separation of particle sizes greater than 75 µm; a hydrometer was used to determine the distribution of particle sizes less than 75 µm.

Lake water was analyzed for TSS using Standard Method 2540D. A well-mixed sample was filtered through a pretreated weighed standard glass-fiber filter and the residue retained on the filter was dried to constant weight at 103 to 105°C. The increase in weight of the filter represented the TSS. After a constant weight was recorded, the residue was ignited at 550°C and cooled to a constant weight. The weight lost on ignition represented VSS.

3.0 EXPERIMENTAL OBSERVATIONS

This section describes the experimental results of the PCB analyses and sediment recovery rates. A detailed analysis of contaminant sources and the extent of PCB weathering is presented. Age dating correlated the vertical contaminant profiles with specific ages and provided an estimate for the sedimentation rates in the areas sampled at Lake Hartwell.

3.1 PCB Sediment Core Profiles

A total of eight sediment cores were collected during this investigation. Three cores each were collected from transects O and L (designated cores A, B, and C), and two cores were collected from transect I (designated A and B). Figure 3-1 shows a conceptual view of each core location facing in the direction of water flow for each of the transects. Sediment core segments were analyzed for PCB concentrations; total PCB (t-PCB) concentrations were determined by the sum of the congener-specific concentrations for each core segment. Biphenyl also was measured in the sediments. Because biphenyl is not a PCB, biphenyl concentrations were not included in the t-PCB concentrations. Figures 3-2 through 3-9 present t-PCB concentration profiles with depth for the sample cores collected from transects O, L, and I. Congener specific profiles are shown in Section 4.0. The t-PCB profiles are presented beginning with the most upgradient sample location (i.e., T-O). Sediment age dates are shown with the cores for which sediment age could be calculated.

Table 3-1 shows average t-PCB concentrations for the first 10 cm of each core. In all but one core, the t-PCB concentration in the surface 10 cm of sediment exceeded the 1-mg/kg t-PCB target. The exception was Core T-L-A, which had an average t-PCB concentration of 0.47 mg/kg from 0-10 cm.

Transects O, L, and I were not noticeably impacted by the surface deposition of clean sediments from the upgradient impoundments, a phenomenon that was observed in earlier investigations and thought to result from sediment releases from the upgradient impoundments. However, unlike the previous investigation, sand layers were found intermittently in some cores at T-O, T-L, and T-I, and at deeper locations within the profile. As expected, the highest concentrations of PCBs were associated with the silt and clay layers, whereas the sand layers contained relatively low PCB concentrations. In some cases, this stratification effect had an impact on the inverted bell-shaped data trend observed in most typical vertical PCB profiles. The sand layers also confounded the age dating analysis, making it impossible to date some cores, or making it possible only to date portions of a core.

3.1.1 Transect O, Cores A, B, and C. The T-O-A t-PCB profile (Figure 3-2) began with relatively low t-PCB concentrations (≈ 2.0 mg/kg) in the upper 30 cm. Between the 30- and 60-cm depths, t-PCB concentrations fluctuated significantly between a low of 0.04 mg/kg (55-60 cm) and a maximum of 16.4 mg/kg (50-55 cm). Between the 60- and 100-cm depths, t-PCB concentrations exhibited a more characteristic bell-shaped profile, with a maximum t-PCB concentration of 11.4 mg/kg at 70-75 cm.

Core T-O-B, which was collected near the center of the transect, differed from Core T-O-A. First, the maximum t-PCB concentration in T-O-B was 8.8 mg/kg, compared to 16.4 mg/kg in T-O-A. Second, the highest t-PCB level occurred near the surface sediments and decreased with depth to a depth of 75 cm (Figure 3-3). The occurrence of a sand lens from approximately 45 cm and continuing to maximum depth did not allow for PCB analysis of the entire core. Only 13 of the 20 segments were submitted for PCB analysis because of the sand interference. Between 0 and 25 cm, t-PCB fluctuated between 5.25 and 8.79 mg/kg (avg = 6.57 ± 1.46 mg/kg). Then, concentrations decreased steadily to 0.61 mg/kg at 50-55 cm, except for a hit of 4.7 mg/kg at 45-50 cm. Between the 55- and 100-cm depths, t-PCB fluctuated slightly with a high concentration of 0.71 mg/kg at 60-65 cm and a low of 127 mg/kg at 70-75 cm; samples were not collected at the 55-60, 65-70, 75-80, and 85-90 cm intervals because of the high sand content in all samples below 45 cm.

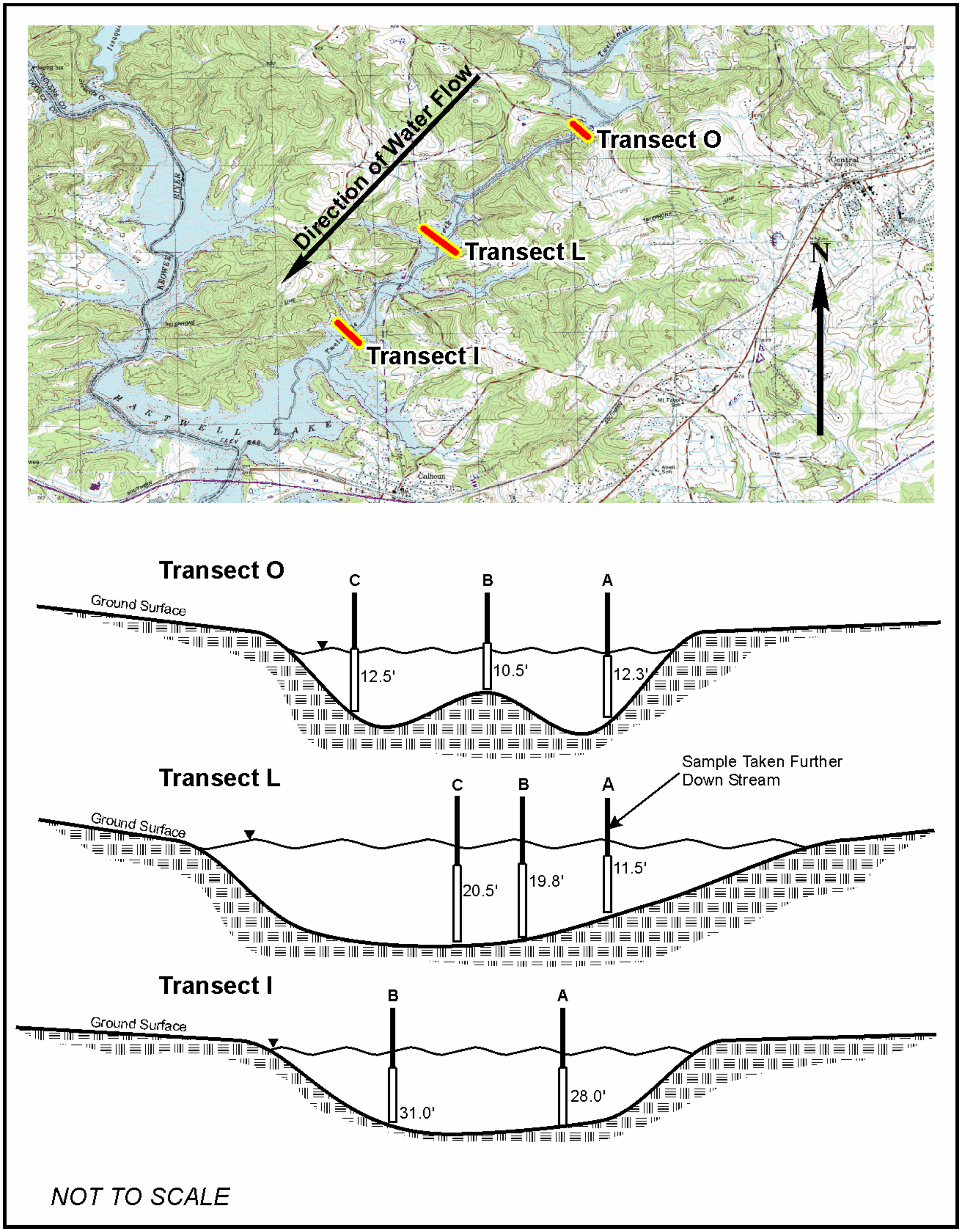

Figure 3-1. Conceptual View of Core Locations with Respect to Water Flow

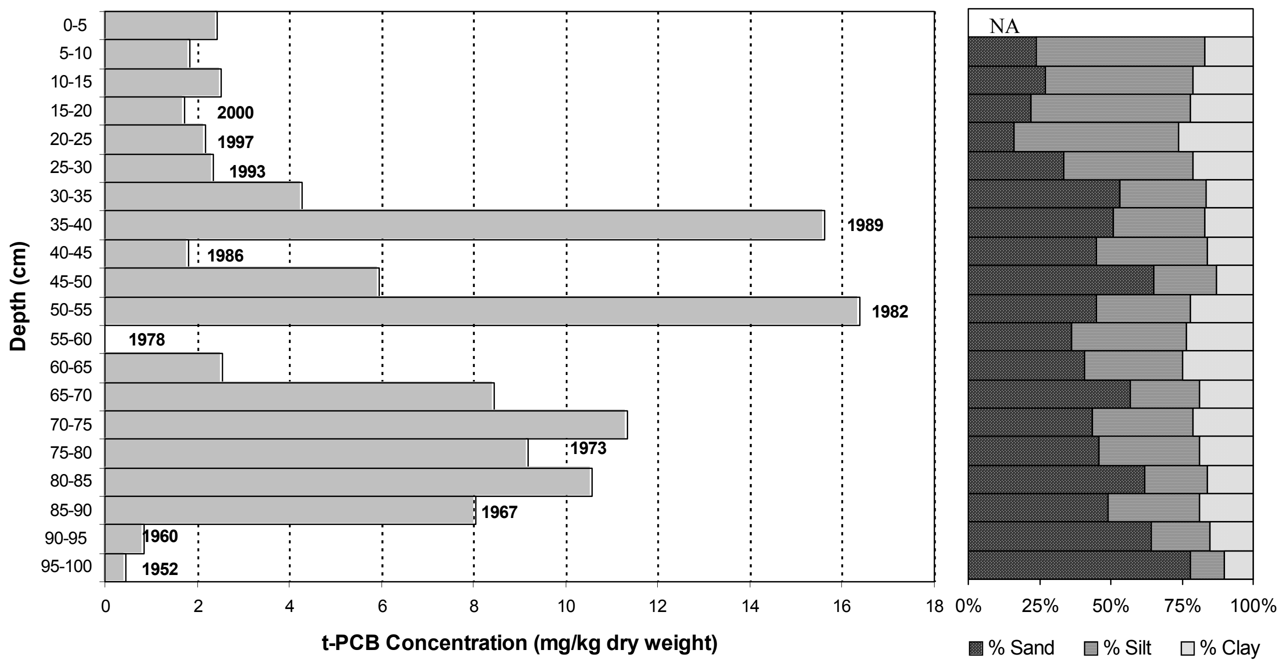

Figure 3-2. t-PCB Vertical Concentration Profile in Core T-O-A

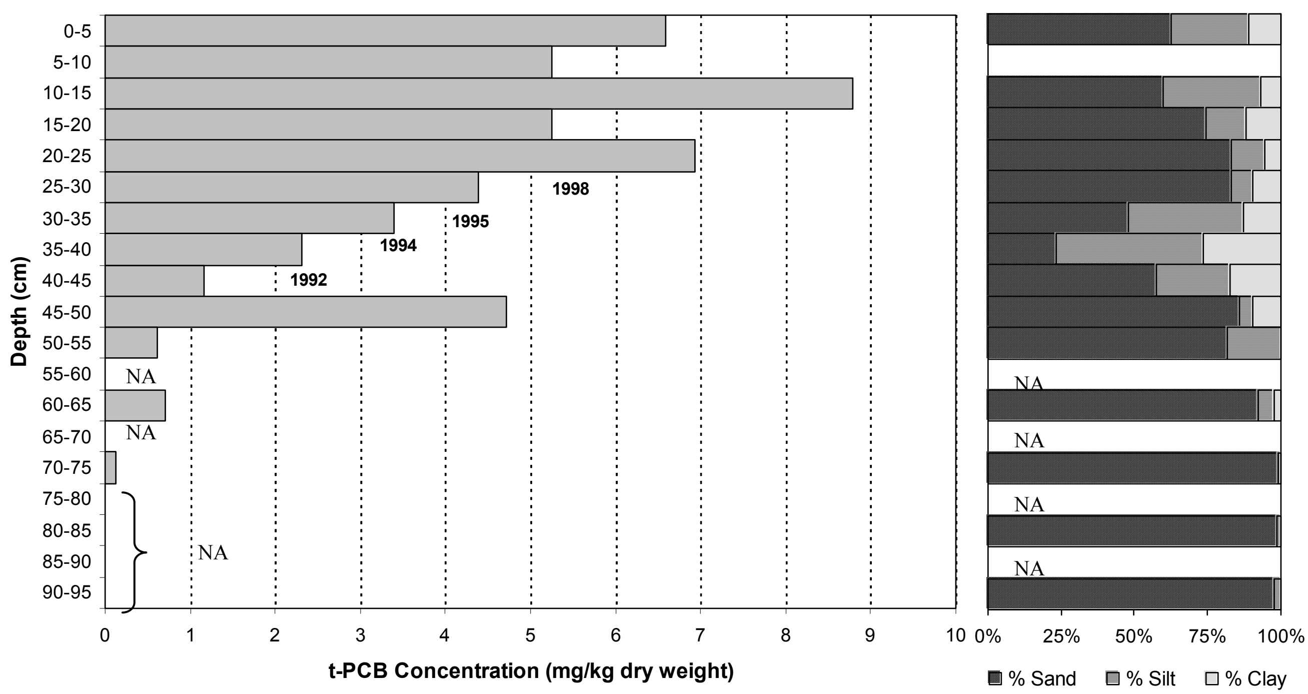

Figure 3-3. t-PCB Vertical Concentration Profile in Core T-O-B
(NA indicates that samples were not analyzed)

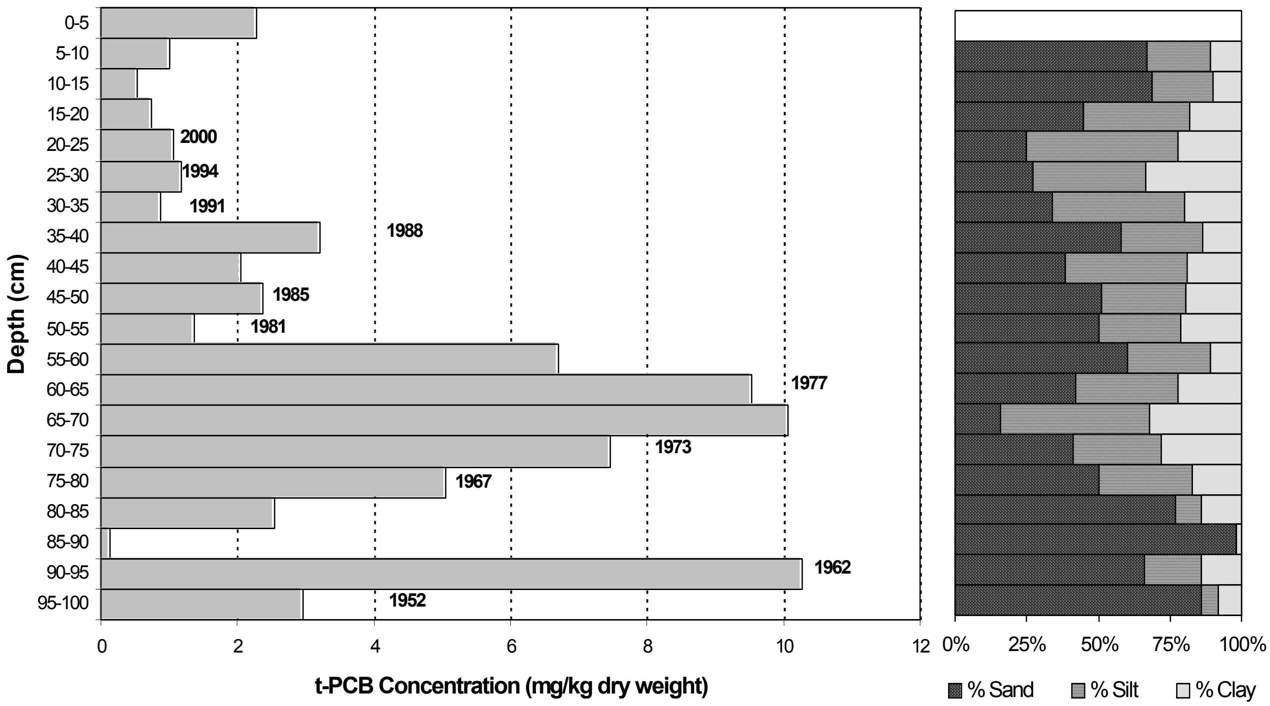

Figure 3-4. t-PCB Vertical Concentration Profile in Core T-O-C

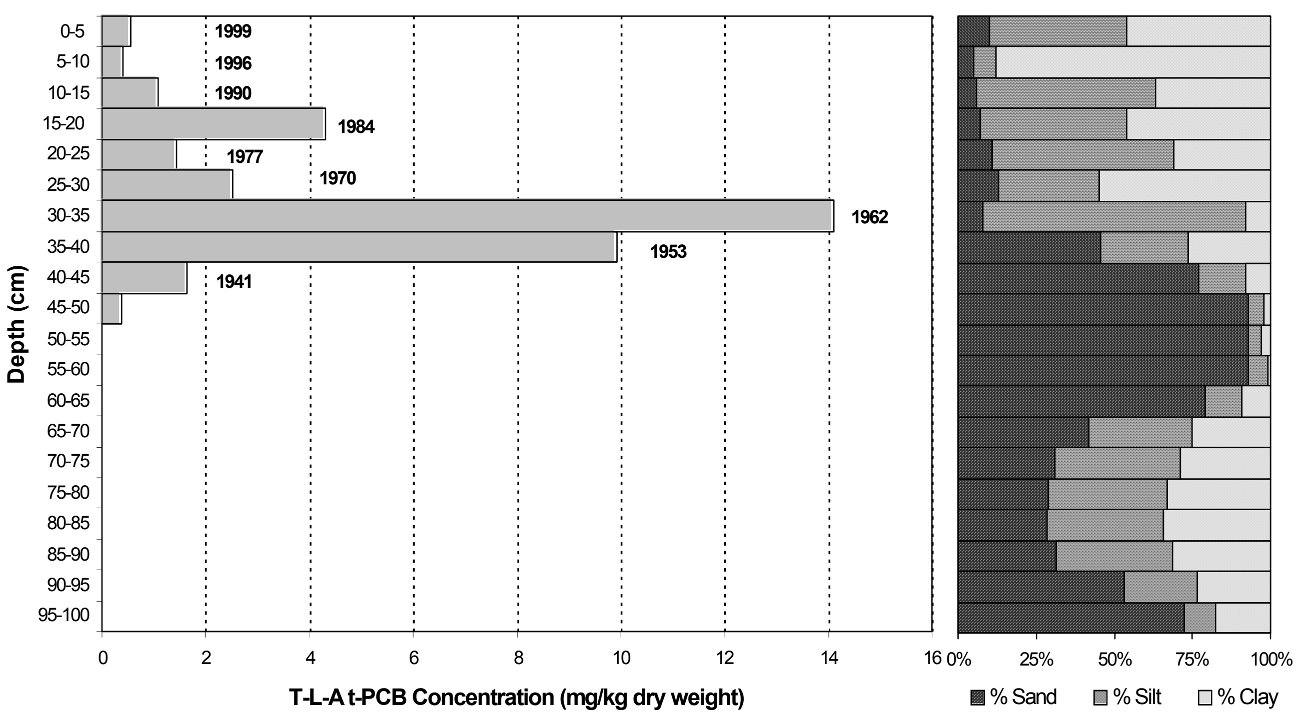

Figure 3-5. t-PCB Vertical Concentration Profile in Core T-L-A

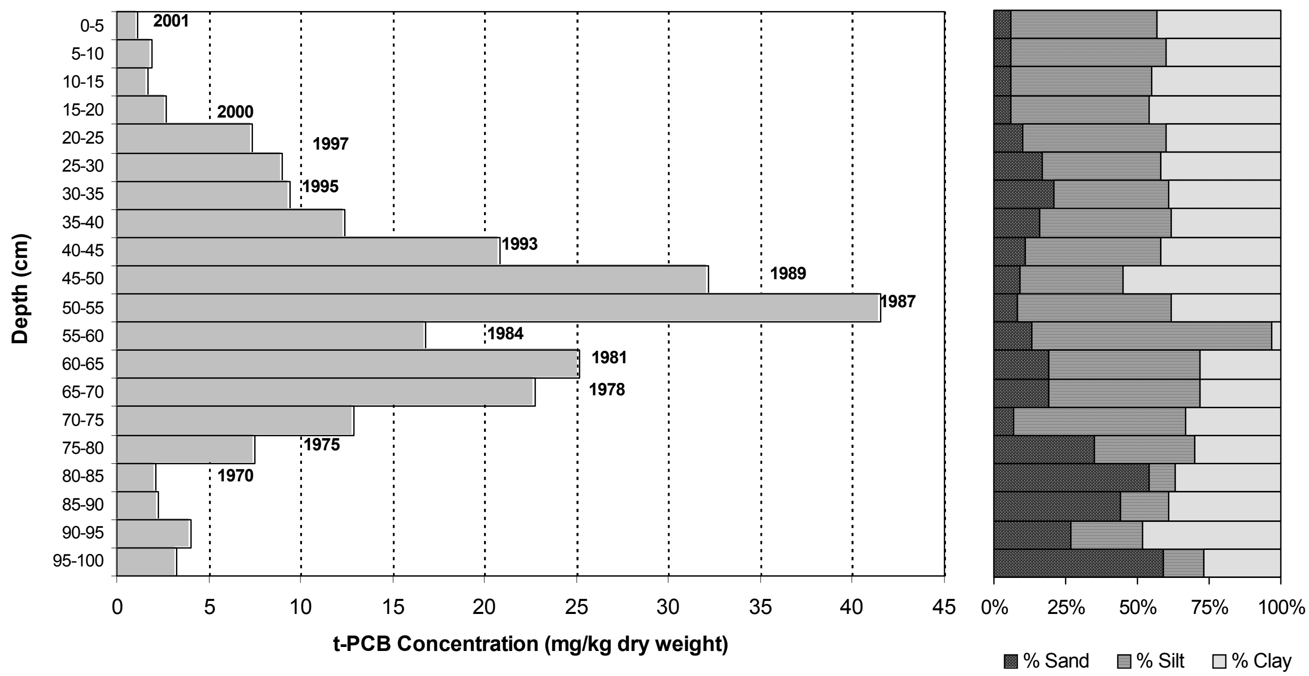

Figure 3-6. t-PCB Vertical Concentration Profile in Core T-L-B

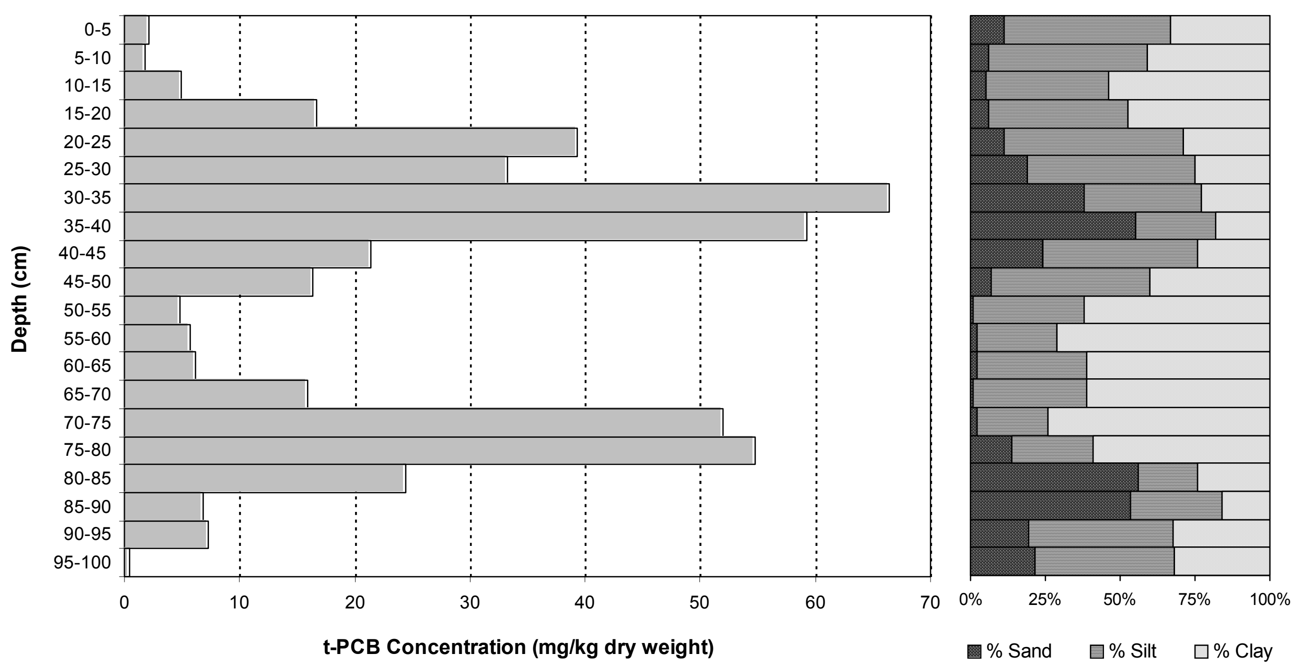

Figure 3-7. t-PCB Vertical Concentration Profile in Core T-L-C

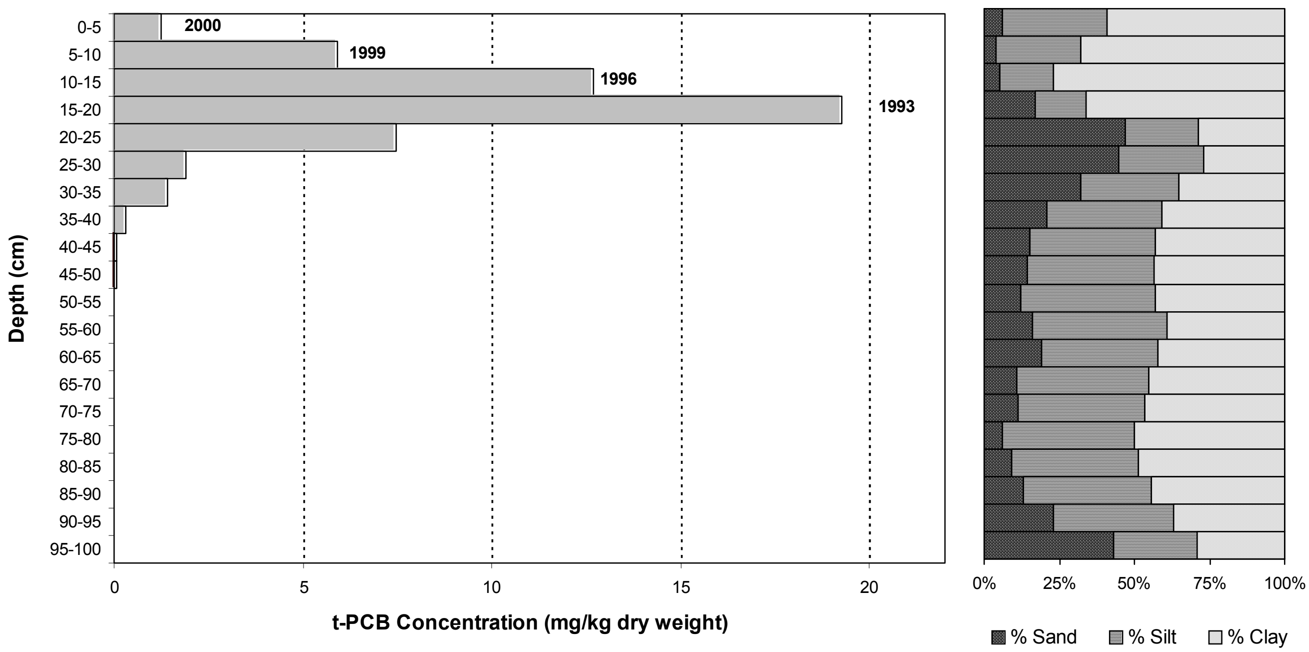

Figure 3-8. t-PCB Vertical Concentration Profile in Core T-I-A

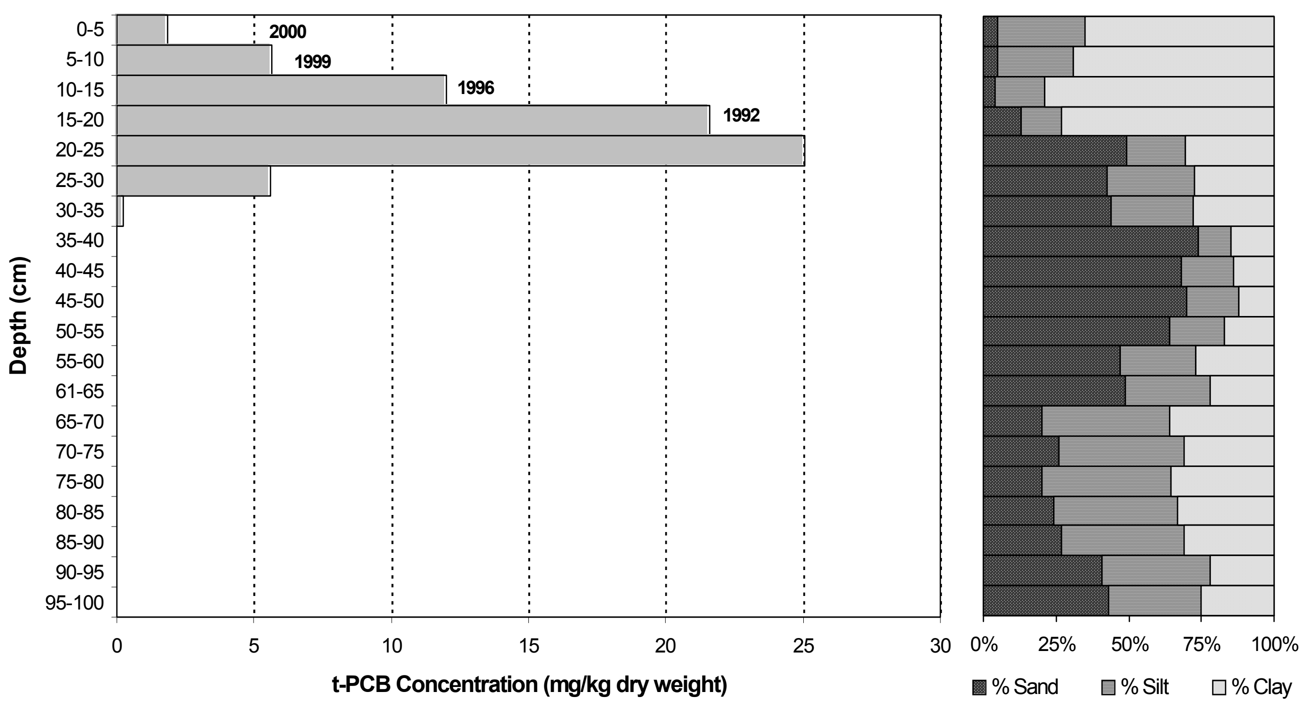

Figure 3-9. t-PCB Vertical Concentration Profile in Core T-I-B

Table 3-1. Total PCBs for Core Segments at 0-5 cm and 5-10 cm

Core Identification	t-PCB (mg/kg) for 0-5 cm	t-PCB (mg/kg) for 5-10 cm
T-O-A	2.44	1.85
T-O-B	6.59	5.26
T-O-C	2.27	1.01
T-L-A	0.55	0.40
T-L-B	1.15	1.91
T-L-C	2.08	1.79
T-I-A	1.23	5.90
T-I-B	1.86	5.64

Core T-O-C showed relatively low t-PCB concentrations in the upper 35 cm; t-PCB concentrations were less than 1.2 mg/kg except for the surface 0-5 cm where concentrations were 2.3 mg/kg (Figure 3-4). The t-PCB concentrations increased from less than 3.2 mg/kg above the 55 cm depth to approximately 10 mg/kg at 65-70 cm, then decreased again to 2.5 mg/kg at 80-85 cm. At 85-90 cm, only trace t-PCB were measured, but at 90-95 cm, concentrations again reached 10 mg/kg.

The PSD profiles shown in Figures 3-2 through 3-4 suggest that the distribution of t-PCB concentrations was strongly influenced by the distribution of sands, silts, and clays, with the highest t-PCB concentrations associated with the silt/clay layers. Transect O was the farthest upgradient transect studied, and was likely impacted by the historical release of sediments from the upstream impoundments. Thus, it was not surprising that the sediment core PCB profiles showed significant variability with depth.

3.1.2 Transect L, Cores A, B, and C. Cores T-L-A and T-L-B exhibited a bell-shaped distribution of t-PCB concentrations with depth. Relatively low t-PCB (<1 mg/kg) occurred in the surface sediments, increasing in concentration at about mid-depth to maximum t-PCB concentrations, and then decreasing in concentration with depth. Maximum concentrations reached approximately 14 mg/kg in T-L-A at a depth of 30-35 cm. An intermittent sand lens from approximately 40-65 cm resulted in little or no PCBs in this range and PCBs were not detected in the deeper silt and clay layers.

A maximum PCB concentration of approximately 42 mg/kg at a depth of 50-55 cm was measured in Core T-L-B (Figure 3-6). PCB concentrations decreased in the deeper sediments, with some sand appearing at a depth of approximately 75-80 cm. PCBs were still present at a depth of 100 cm at a t-PCB concentration of approximately 3 mg/kg. Samples deeper than 100 cm were not collected. The T-L-B core most closely resembled the original Transect-L core collected in February 2000 (Battelle, 2001b).

Core T-L-C exhibited a double bell pattern (Figure 3-7). The t-PCB concentrations were relatively low at the soil-water interface (~2.0 mg/kg) and increased to approximately 66 mg/kg at a depth of 30-35 cm. t-PCB concentrations subsequently decreased to approximately 5 mg/kg at a depth of 50-55 cm and then exhibited a second increasing and decreasing trend in the last 35 cm of the core profile, with a maximum concentration of 54 mg/kg at 75-80 cm and a minimum concentration of 0.4 mg/kg at 95-100 cm. The lower concentrations at 50-65 cm could not be attributed to higher levels of sand; silt and clay in this depth range accounted for 93%-99% of the segment material. In the case of Core T-L-C, the highest t-PCB concentrations did not appear to correspond to the highest silt/clay concentrations. In fact, the highest PCB concentrations appeared in the 30-35 cm and 35-40 cm segments, which had sand concentrations of approximately 38% and 55%, respectively.

3.1.3 Transect I, Cores A and B. Cores T-I-A and T-I-B exhibited similar trends (Figures 3-8 and 3-9). In both core profiles, t-PCB reached maximum concentration at relatively shallow depths (20-25 cm), and t-PCB subsequently decreased rapidly. There were no detectable PCBs deeper than 60 cm for both T-I profiles. These profiles were very similar to the profiles reported for the cores collected in February 2000 (Battelle, 2001b).

3.2 PCB Sediment Core Profiles Normalized to Total Organic Carbon

The concentration of t-PCB in each of the eight cores was converted from mg t-PCB/kg of sediment to mg t-PCB/kg TOC, to determine if this conversion would alter the distribution of t-PCB in the core profiles. Figures 3-10 through 3-17 present t-PCB concentration profiles normalized to TOC with depth for the sample cores collected from transects O, L, and I. In general, the conversion to TOC did not affect the distribution of PCBs throughout the cores. Cores collected at Transects L and I (Figures 3-13 to 3-17) exhibited distributions that were very similar to the non-converted data (Figures 3-5 to 3-9). Cores T-O-B and T-O-C exhibited greater concentrations of t-PCB associated with TOC in the bottom portions of the cores compared to the non-converted data.

3.3 Surface Sediment t-PCB Concentrations

Surface sediments were collected and analyzed for PCB concentrations at seven locations (C-0 through C-6) (Figure 3-18); t-PCB concentrations were determined by summing the congener-specific PCB concentrations for each sample. The C-0 through C-6 sample locations were selected to match U.S. EPA's historical *Corbicula* clam monitoring locations. Table 3-2 shows the t-PCB and biphenyl concentrations of each surface sediment sample. At locations C-3 and C-6, multiple sediment samples were taken from 0-30 cm depth. Table 3-3 summarizes the t-PCB and biphenyl concentrations and corresponding depths for samples collected from locations C3 and C6.

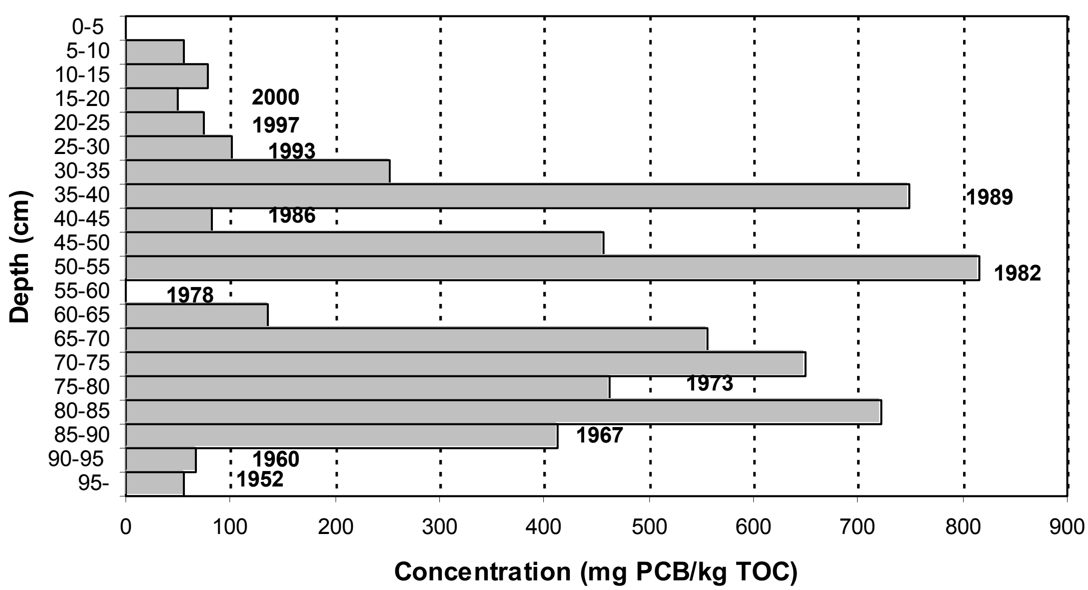

Figure 3-10. t-PCB Vertical Concentration Profile in Core T-O-A Normalized for Total Organic Carbon

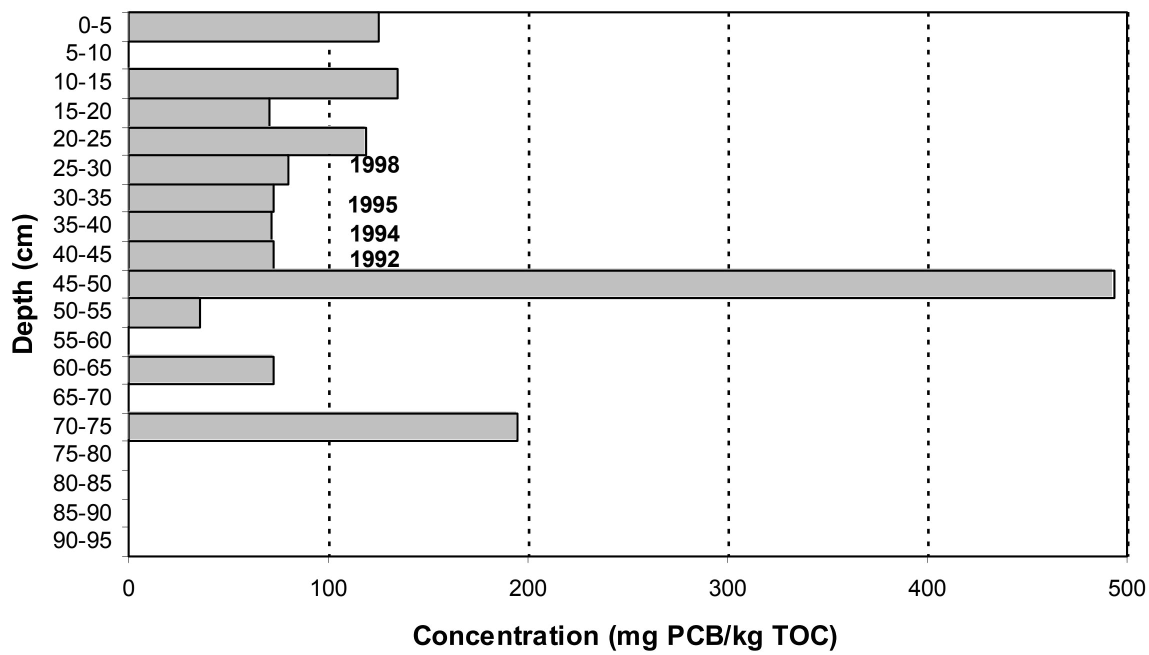

Figure 3-11. t-PCB Vertical Concentration Profile in Core T-O-B Normalized for Total Organic Carbon

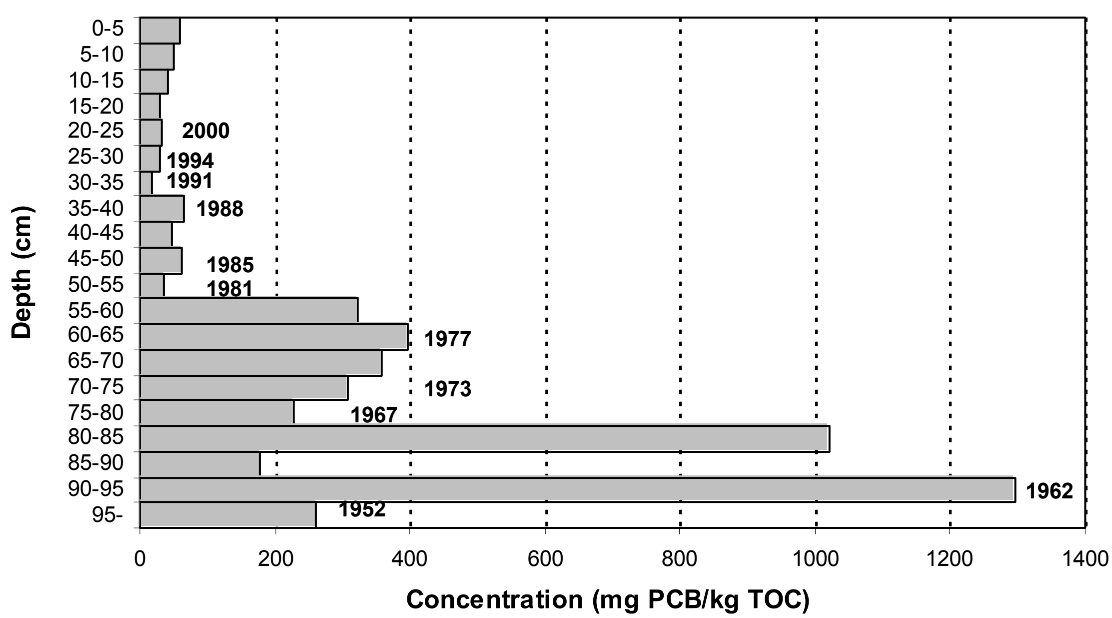

Figure 3-12. t-PCB Vertical Concentration Profile in Core T-O-C Normalized for Total Organic Carbon

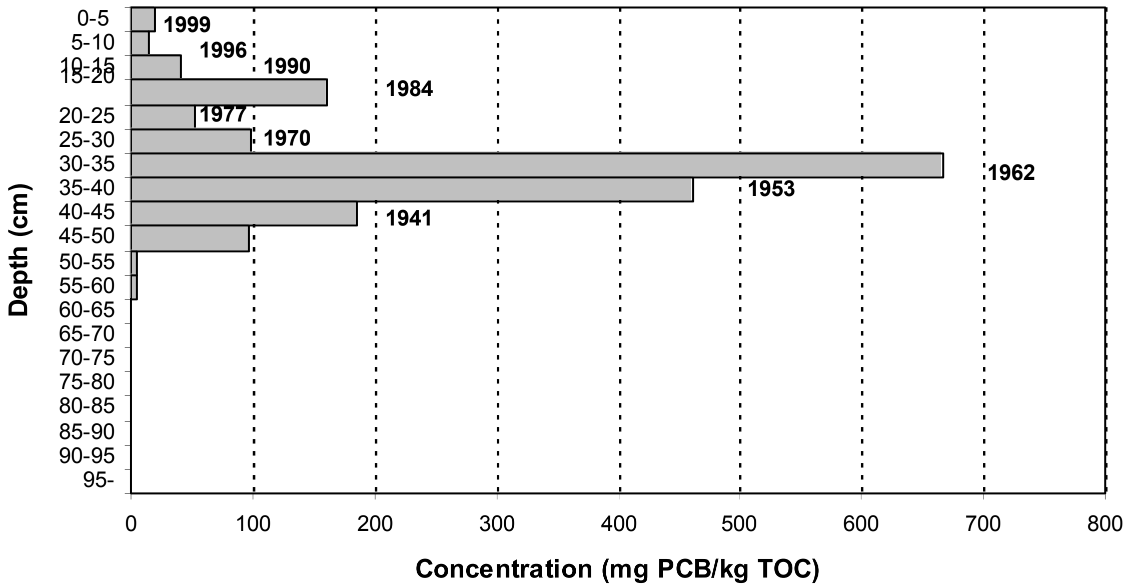

Figure 3-13. t-PCB Vertical Concentration Profile in Core T-L-A Normalized for Total Organic Carbon

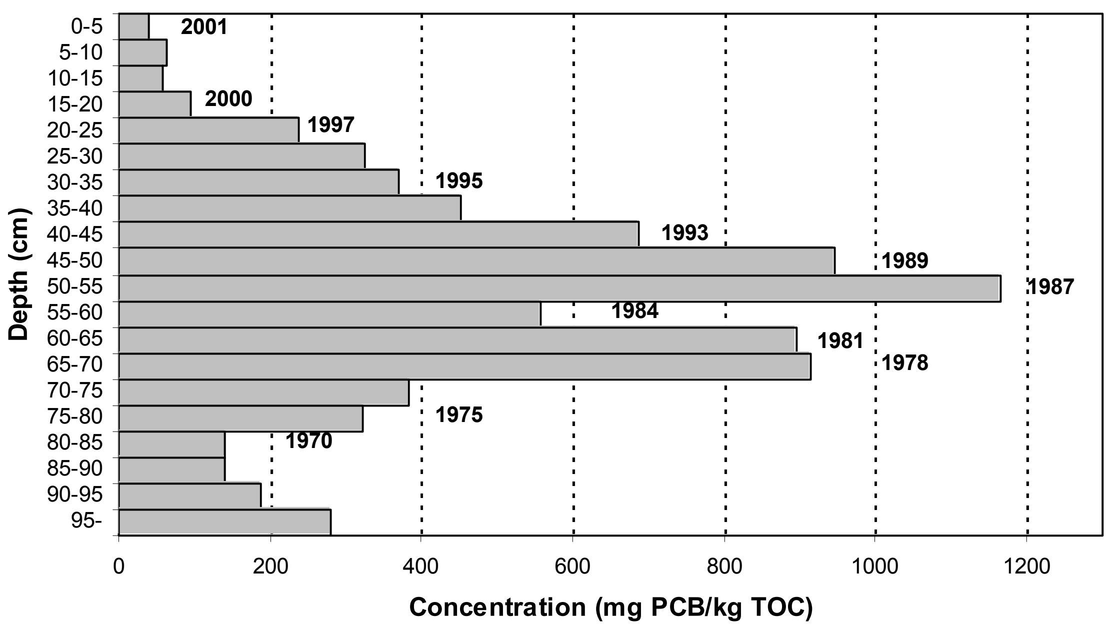

Figure 3-14. t-PCB Vertical Concentration Profile in Core T-L-B Normalized for Total Organic Carbon

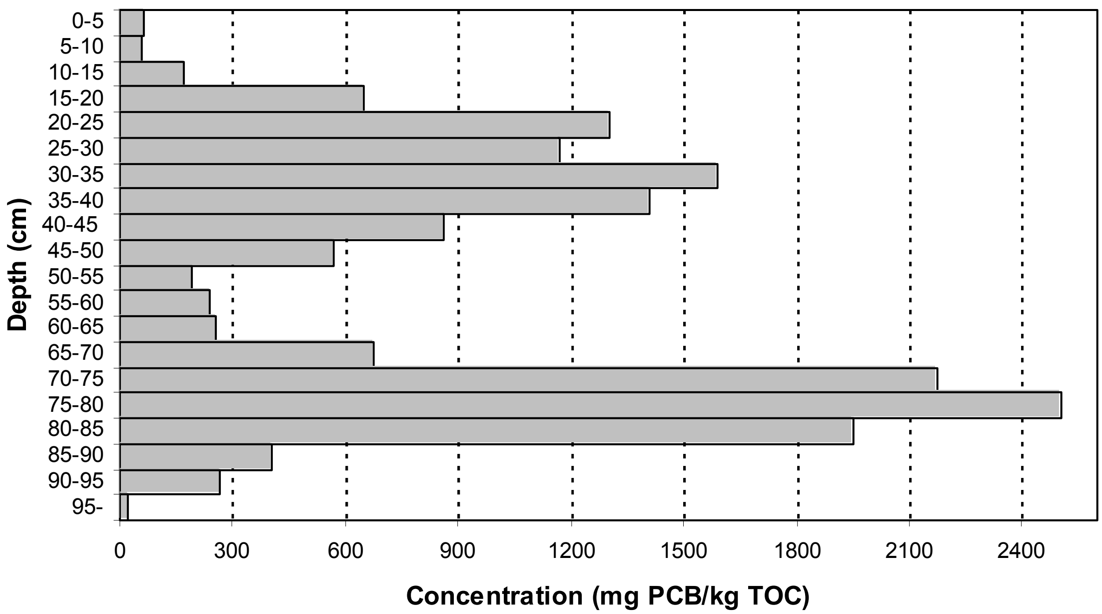

Figure 3-15. t-PCB Vertical Concentration Profile in Core T-L-C Normalized for Total Organic Carbon

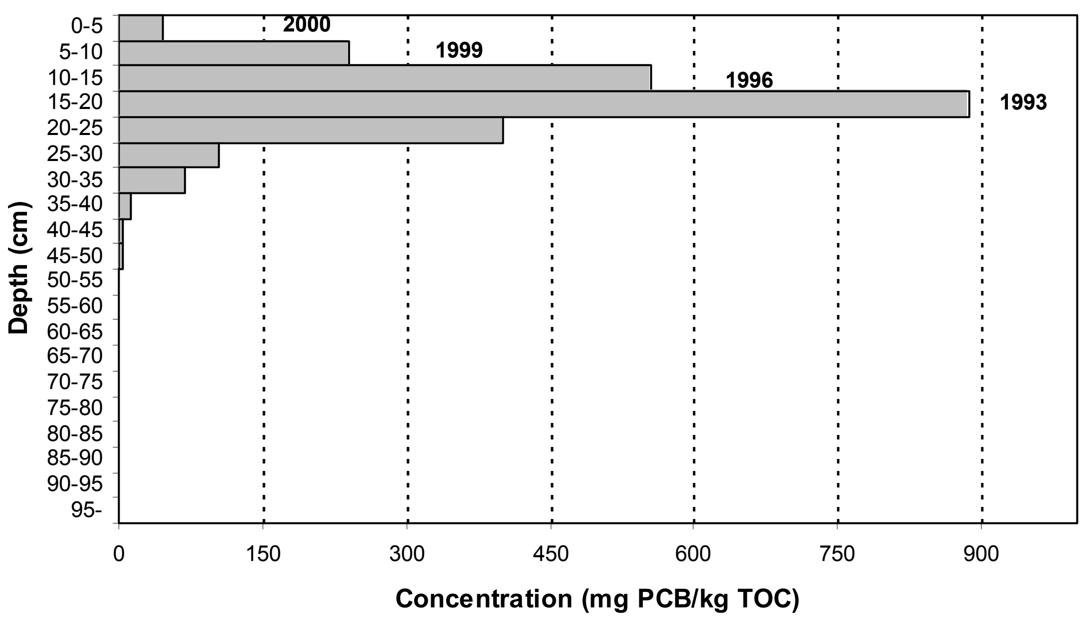

Figure 3-16. t-PCB Vertical Concentration Profile in Core T-I-A Normalized for Total Organic Carbon

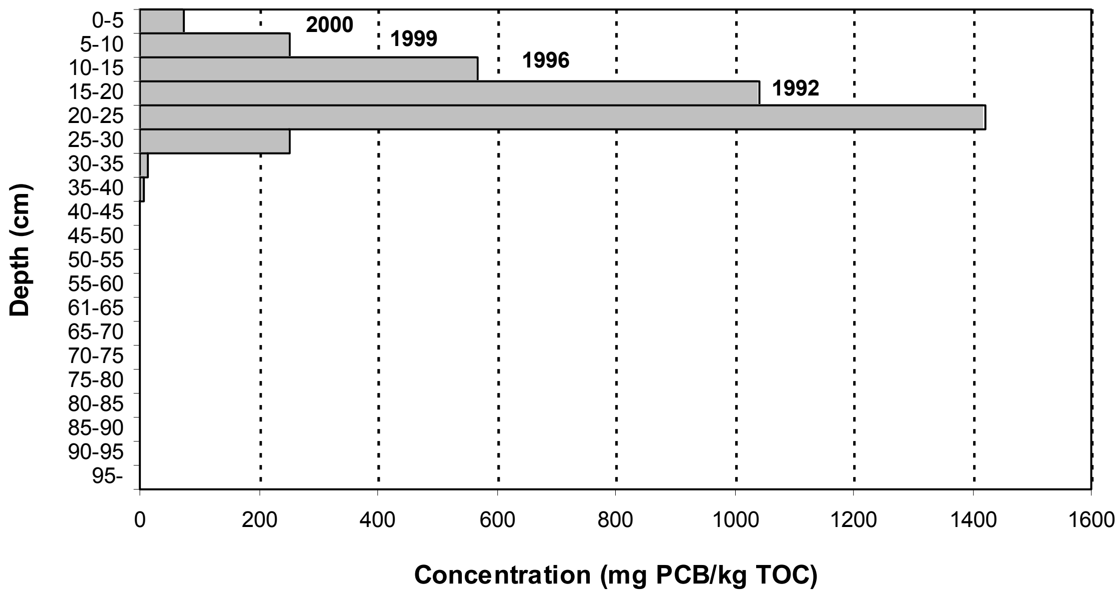

Figure 3-17. t-PCB Vertical Concentration Profile in Core T-I-B Normalized for Total Organic Carbon

Three of the surface sediment sample locations were collected upstream from the Sangamo-Weston Plant (Figure 3-18) and are expected to represent background samples (C-0, C-2, and C-4). Samples at C-0 were collected from Town Creek at Highway 178 Bridge, which is upstream from the plant. C-2 samples were collected from Middle Fork Creek upstream from where it meets Twelvemile Creek, and C-4 samples were collected from Wolf Creek before it flows into Twelvemile Creek. All of the samples from these three locations had low t-PCB concentrations ranging from below detection limits to 12.5 µg/kg. The *Corbicula* clam studies indicated that all three of these locations had *Corbicula* PCB concentrations of <0.05 mg/kg (Schlumberger, 2002), confirming that these were background stations.

Samples collected at C-1, located directly downstream from the Sangamo-Weston plant, had the highest PCB concentrations of the surface sediment samples (Table 3-2). Two samples, C-1A (1,025 µg/kg) and C-1C (3,813 µg/kg), had t-PCB concentrations that exceeded the target concentration of 1 mg/kg. These were the only two surface sediment samples with concentrations exceeding the 1 mg/kg target concentration. The C-1 *Corbicula* clam samples also had the highest t-PCB concentration (2.56 mg/kg) of the seven *Corbicula* locations (Schlumberger, 2002). Moving downstream from the Sangamo-Weston plant, the t-PCB concentration decreased at C-3 to 23 and 61 µg/kg, then increased again at C-5 to 215 and 631 µg/kg. Core samples collected at C-3 also had low t-PCB concentrations at deeper depths (Table 3-3). The surface sediment samples collected furthest downstream, before Lake Hartwell, were collected in Twelvemile Creek at Highway 337 (Maw Bridge). The two surface sediment samples collected at this location, C-6A and C-6B, had t-PCB concentrations of 3.84 and 147 µg/kg, respectively. The three core samples at C-6; C-6C-1 (40-52 cm), C-6D-1 (5-12 cm), and C-6D-2 (20-27 cm) had t-PCB concentrations of 73, 44.2, and 11.05 µg/kg, respectively. The *Corbicula* samples collected at C-3, C-5, and C-6 had PCB concentrations of 0.973, 0.758, and 1.27 mg/kg, respectively (Schlumberger, 2002).

The *Corbicula* clam t-PCB concentrations appear to correspond to the surface sediment t-PCB concentrations, with non-detect t-PCB levels at background locations C-0, C-2, and C-4, and the highest concentrations at C-1.

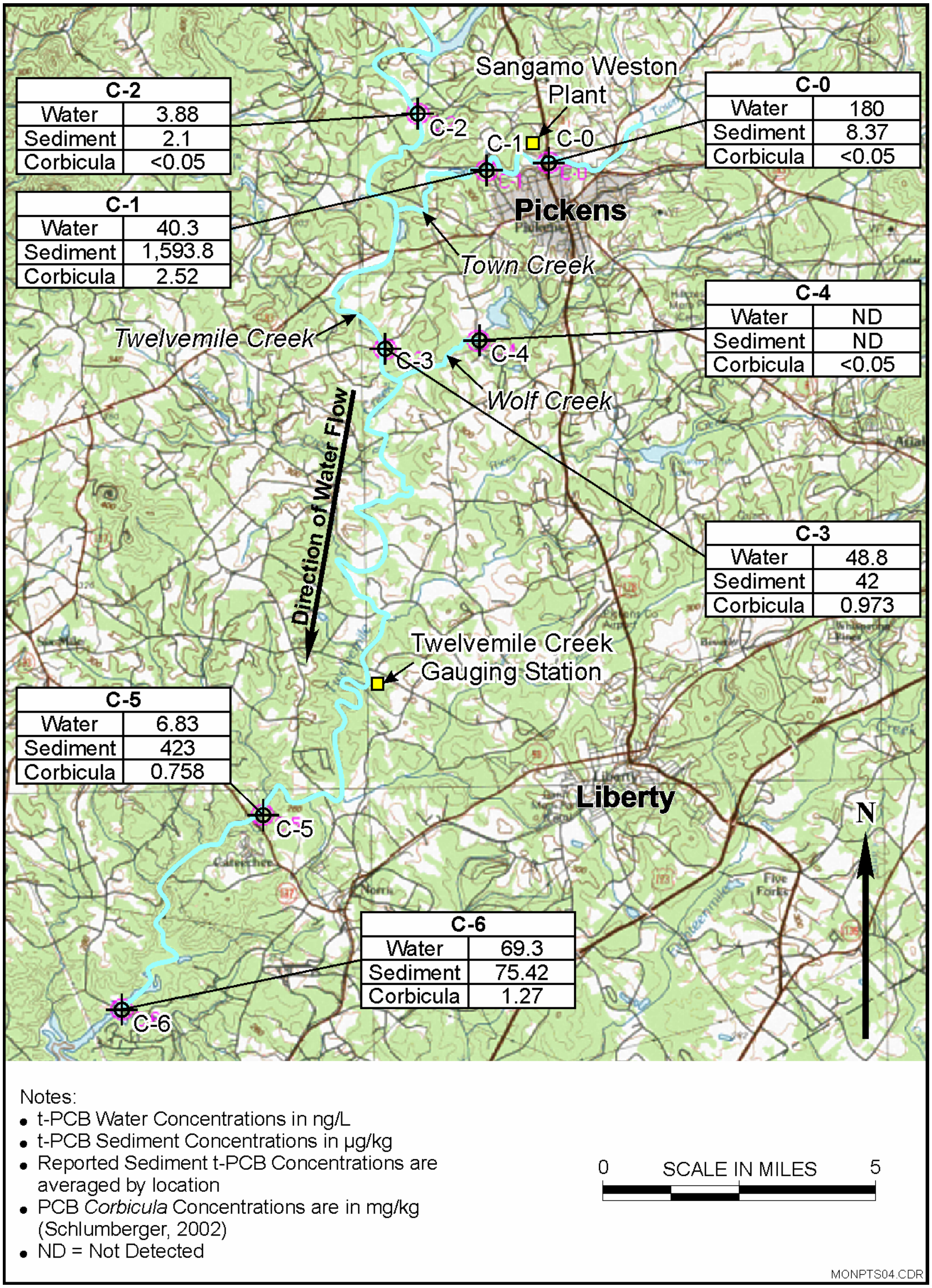

Figure 3-18. t-PCB Concentrations at High-Volume Water and Surface Sediment Sampling Locations in Twelvemile Creek Watershed

Table 3-2. Surface Sediment t-PCB and Biphenyl Concentrations

Sample ID	Surface t-PCB Concentration (μg/kg)	Surface Biphenyl Concentration (μg/kg)
C-0A	4.23	0.40
C-0B	12.5	0.57
C-1A	1,025	0.40
C-1B	982	0.51
C-1C	3,813	1.39
C-1D	555	0.92
C-2A	0.70	1.14
C-2B	3.52	0.11
C-3A	61	0.20
C-3B	23	0.53
C-4A	0.0	0.91
C-4B	0.0	0.06
C-5A	215	0.26
C-5B	631	0.40
C-6A	3.84	0.70
C-6B	147	0.48

Table 3-3. Sediment t-PCB Concentrations for Cores C-3 and C-6

Sample ID	Sample Depth (cm)	Surface t-PCB Concentration (μg/kg)	Surface Biphenyl Concentration (μg/kg)
C-3C-1	5-15	9.17	1.58
C-3D-1	20-30	11.3	1.22
C-6C-1	40-52	73	1.20
C-6D-1	5-12	44.2	0.95
C-6D-2	20-27	11.05	1.14

3.4 High-Volume Water Concentration Profiles

The results from the high-volume water sample filtrations are presented in Table 3-4 and posted values are shown in Figure 3-18. The t-PCB concentrations for each filter medium (GF/C and Empore™) are reported in ng/L; these concentrations were determined by dividing the t-PCB mass on each filter (ng/filter) by the water volume passed through each filter (≈ 20 L/sample). TSS, VSS, and unfiltered and filtered dissolved organic carbon (DOC) concentrations also are reported in Table 3-4.

The results of the high-volume water filtrations revealed that particles greater than 0.7 μm were captured on the primary filter and that these particles contained relatively low levels of adsorbed PCBs. The accumulation of PCBs on the secondary or Empore™ filter is representative of soluble PCBs or PCBs adsorbed to particles less than 0.7 μm in size. For each sample, the majority of the mass was associated with the PCB fraction captured by the Empore™ filters.

Table 3-4. PCB, TSS, VS, and DOC Results from High-Volume and Parallel Water Samples

Sample Location	PCB Filtration				TSS/VSS Filtration			
	t-PCB (ng/L)[(a)]			DOC (mg/L)	TSS (mg/L)	VSS (mg/L)	DOC (mg/L)	
	GF/C Filter	Empore™ Filter	GF/C + Empore™ Filter	Unfiltered Sample			Unfiltered Sample	Filtered Sample
C-0	1.35	180	181.35	4.95	3.51	2.97	4.58	4.44
C-1	2.04	40.3	42.34	6.19	4.39	3.24	8.18	2.77
C-2	0.13	3.88	4.01	5.44	2.81	2.38	5.42	5.14
C-3	4.03	48.8	52.83	6.63	4.89	2.91	5.50	4.99
C-4	ND	ND	ND	5.25	2.64	2.56	4.03	7.23
C-5	1.87	6.83	8.70	4.87	7.64	3.99	4.76	5.25
C-6	2.31	69.3	71.61	4.99	4.88	3.30	5.21	5.28
T-O	20.0	15.4	35.4	5.59	23.9	6.28	5.57	5.41
T-L	4.67	22.3	26.97	5.50	2.30	2.69	5.33	5.68
T-L Duplicate	1.45	28.8	30.25	5.42	NS	NS	NS	NS

(a) Values shown represent each independent samples minus the average PCB determined during triplicate blank sample runs.
ND = not detected.
NS = not sampled.

In addition to the target filter samples, blank sample runs were prepared by passing 20 L of Milli-Q™ (18 Mohm) water through the filtration setup that contained both the primary and Empore™ filters. The filters were removed from the system, contained, processed and sampled for PCBs along with the target sample filters. The results from the blank analyses (reported in Appendix E) indicated there was accumulation of PCB mass in both the primary and Empore™ filters of each blank run. It is unclear why PCB accumulation was observed on the blank filters, as the system was decontaminated between filtered samples; perhaps the decontamination procedure was not effective in removing residual PCBs from the system. However, the accumulation of PCBs on the blank filters resulted in approximately 33% of the total average PCBs for the target sample set. It is not believed that the decontamination procedure was ineffective; rather, it is believed other variables may have been introduced that would account for the mass of PCBs observed during the blank filter runs. For example, it is possible that the Empore™ filters may have been extremely efficient in absorbing volatilized PCB mass and that an open package of filters in proximity to the sample processing area may have resulted in the sorption of PCB mass onto the filters prior to use. Further testing and method development would be needed to test this hypothesis.

One LCS was filtered at the end of the sample set. The LCS consisted of 19.5 L of Milli-Q™ water and 0.5 L of matrix spike solution, where the matrix spike solution consisted of 54 PCB congeners of known concentrations. The anticipated mass loading of the individual PCB congeners was approximately 180 ng, and the congener makeup was representative of the full range of molecular weights for the reported PCBs. The LCS resulted in a low percent recovery that ranged from 4% (for the heavier-molecular-weight PCBs) to 46% for the lower-molecular-weight PCBs. Therefore, the PCB results presented in Table 3-4 may be underestimated due to the low recovery of the LCS.

The average mass of t-PCB reported for the blank runs was 394 ± 19 ng. The t-PCB concentration results presented in Table 3-4 were calculated by subtracting the average t-PCB mass accumulated on filters of triplicate blank runs from the t-PCB mass accumulated on target sample filters, and dividing by the total volume of sample filtered (20 L).

Figure 3-18 shows each water sample location in respect to the Sangamo-Weston Plant (located on Town Creek). Qualitatively, the PCB results follow the trend that one might expect when viewing the proximity of each sample location to the former PCB source except for the sample collected at station C-O. The highest concentration of t-PCB in water (180 ng/L) was observed at location C-0, which is slightly upstream from the plant on Town Creek. A relatively high concentration of t-PCB (40.3 ng/L) was also noted for location C-1, which is downgradient of the plant on Town Creek. Location C-2, which is located on Twelvemile Creek, upstream from the point where Town Creek and Twelvemile Creek join, had a relatively low concentration of t-PCB (3.88 ng/L) as would be expected for a background location. At sample location C-3, which is further downstream on Twelvemile Creek, the t-PCB concentration was 48.8 ng/L, relatively the same concentration observed at C-1. There was no reportable PCB concentration observed at background location C-4, which is downgradient from the plant, but located on Wolf Creek (a tributary to Twelvemile Creek), just upstream from where Wolf Creek joins with Twelvemile Creek. Samples C-5 and C-6, collected further downstream on Twelvemile Creek, produced t-PCB concentrations of 6.83 and 69.3 ng/L, respectively. In samples collected at T-O and T-L, t-PCB concentrations of 15.4 and 22.3 ng/L were detected. The duplicate sample collected from T-L produced a t-PCB concentration of 28.8 ng/L. The relative percent difference (RPD) between the duplicate filter sets for T-L was 25%.

TSS for the *Corbicula* locations (C0-C6) ranged from 2.64 to 7.64 mg/L. TSS at T-L and T-O were 2.30 mg/L and 23.9 mg/L, respectively. VSS results ranged from 2.38 to 6.28 mg/L for all water samples. The DOC values from water subsamples taken prior to filtration for TSS/VSS ranged from 4.0 to 8.2 mg/L and did not change significantly after filtration.

3.5 Surface Sediment Recovery Rates

An evaluation of surface sediment recovery rates was made to determine how quickly surface sediment t-PCB concentrations are approaching the 1.0 mg/kg sediment cleanup goal.

Table 3-5 shows t-PCB concentrations in surface 15 cm of each core and maximum t-PCB concentrations measured in the eight cores (T-O-A, T-O-B, T-O-C, T-L-A, T-L-B, T-L-C, T-I-A, and T-I-B). Except for core T-O-B, t-PCB concentrations decreased with increasing sedimentation in each core. The upper 15 cm of each core generally exhibited decreasing t-PCB concentrations with sedimentation, approaching the target concentration of 1.0 mg/kg; the maximum surface sediment (0-5 cm) t-PCB concentration was measured at T-O-B at 6.59 mg/kg, and the minimum measured surface sediment concentration was measured at T-L-A at 0.55 mg/kg.

To determine how quickly surface contaminant concentrations are approaching the target t-PCB concentration of 1.0 mg/kg, sediment concentrations (mg/kg) were plotted against sediment depth for Transects L and I (Figure 3-19). This analysis could not be used for the T-O cores because variable concentrations were observed in the top portion of each of these cores. As discussed earlier, this variability was due to the fact that the T-O transect was impacted by the sand/silt/clay layering caused by the historic sediment release events from the upgradient impoundments.

Table 3-5. Sediment t-PCB Concentrations and Maximum t-PCB in Downgradient Cores

Core	t-PCB Concentration (mg/kg)			
	Surface 0-5 cm	5-10 cm	10-15 cm	Maximum Core Concentration
T-O-A	2.44	1.85	2.51	16.38 (50-55 cm)
T-O-B	6.59	5.26	8.79	8.79 (10-15 cm)
T-O-C	2.27	1.01	0.52	10.28 (90-95 cm)
T-L-A	0.55	0.40	1.08	14.13 (30-35 cm)
T-L-B	1.15	1.91	1.71	41.55 (50-55 cm)
T-L-C	2.07	1.78	4.98	66.39 (30-35 cm)
T-I-A	1.23	5.90	12.69	19.28 (15-20 cm)
T-I-B	1.86	5.64	12.03	25.07 (20-25 cm)

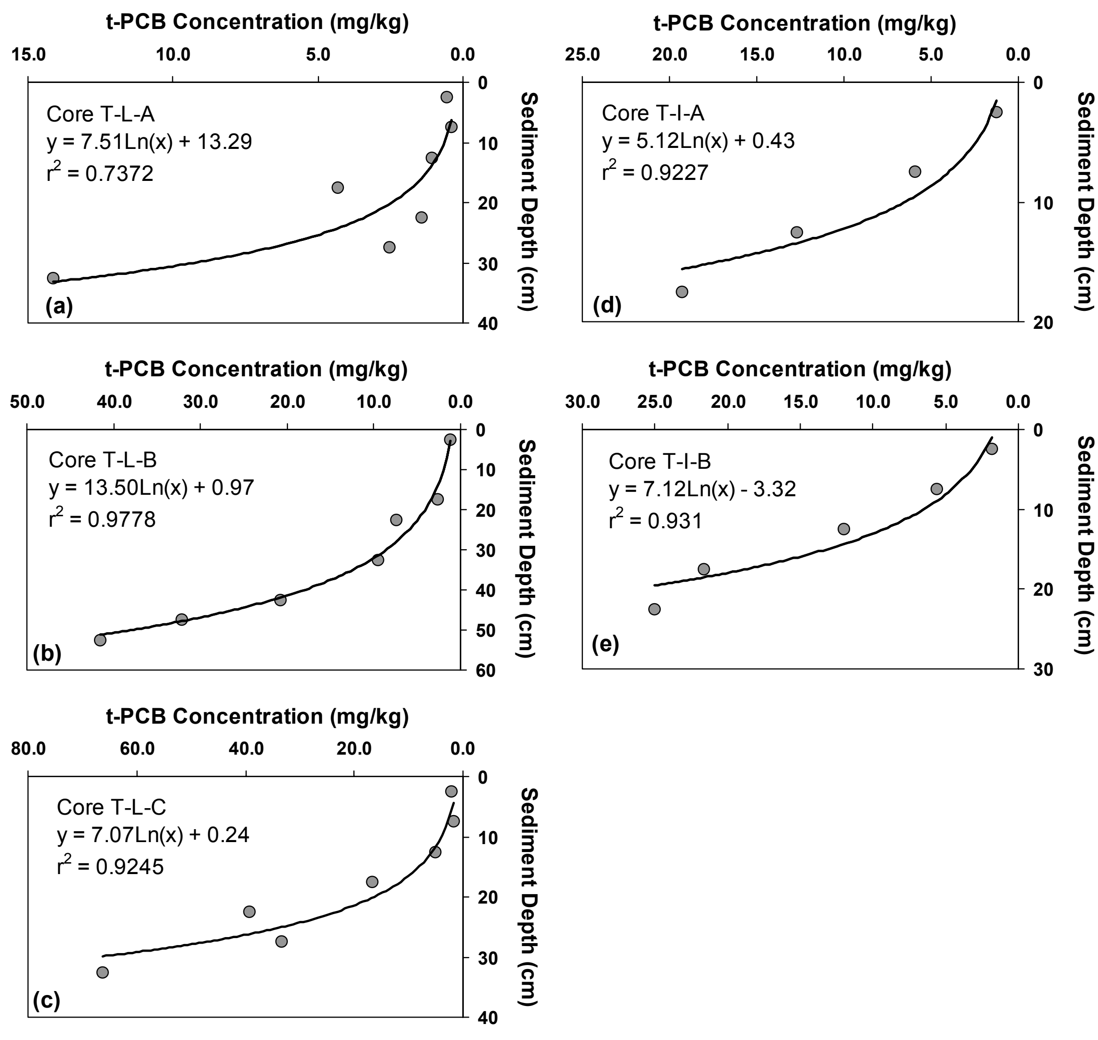

Figure 3-19. Sediment Depth (cm) Plotted Against t-PCB Concentration (mg/kg) for Five of the Eight Cores; Depths Were Assumed to be the Mid-Point of Each Respective 5-cm Core Segment. (Best-fit logarithmic curves are shown with corresponding equations and correlation coefficients.)

Depths of each sediment interval were plotted on the y-axes. For each of the five cores a logarithmic model was fit to the data; each figure illustrates the best-fit logarithmic curve, corresponding equation, and correlation coefficient (r^2). Using these equations, the sedimentation depth required to achieve a surface sediment concentration of 1.0 mg/kg could be determined by setting the t-PCB value (i.e., x-axis value) to 1.0. Table 3-6 shows the predicted sediment depth for a 10-cm surface sediment interval to achieve 1.0 mg/kg t-PCB. This analysis suggests that an additional 10.8 cm of sedimentation would be required for T-I-B to achieve a 1.0 mg/kg concentration in the surface 10 cm. Core T-L-A, which already achieved the target 1.0 mg/kg concentration, did not require additional sedimentation. Except for T-L-A, the range of sedimentation to achieve the 1.0 mg/kg goal is 1.5 to 10.8 cm.

Table 3-6. Surface Sediment Elevations to Achieve 1.0 mg/kg, 0.4 mg/kg, and 0.05 mg/kg t-PCB in the Upper 10 cm Sediment

Transect Core	Sedimentation to Achieve 1 mg/kg[a] t-PCB (cm)	Sedimentation to Achieve 0.4 mg/kg[b] t-PCB (cm)	Sedimentation to Achieve 0.05 mg/kg[c] t-PCB (cm)
T-L-A	-5.79[d]	1.09	16.7
T-L-B	6.53	18.9	47.0
T-I-A	7.08	11.8	22.4
T-I-B	10.8	17.3	32.1
Avg.	5.18 ± 6.4	12.7 ± 7.0	29.3 ± 11.5

(a) ROD Surface sediment cleanup goal (U.S. EPA, 1994).
(b) Mean value for site-specific sediment quality criteria calculated using the U.S. EPA's equilibrium partitioning approach (U.S. EPA, 1994).
(c) From NOAA, based on an evaluation of published criteria associated with biological effects on aquatic life (U.S. EPA, 1994).
(d) Negative values in Figure 3-19 imply that the midpoint elevation for a 1-mg/kg 5-cm sediment segment occurs beneath the existing sediment surface.

The accuracy of this analysis depends on the thickness of the cored sediment segments. For this study, the cores were extruded in 5-cm intervals. Narrower intervals would have provided more precise results. However, the thickness of the intervals had to be weighed against the cost of increased sample frequency and the ability to extrude narrower cores, particularly at the sediment-water interface, where coring proved most difficult. Furthermore, the analysis assumed that surface t-PCB concentrations approach background asymptotically. Mechanisms that influence the rate of surface sediment PCB concentration reductions include the rate of sedimentation, the PCB concentration on particles that continue to be transported and deposited on sediment surfaces, and the amount of mixing in the surface sediments. More rapid sedimentation with cleaner sediments would enhance the rate of recovery, whereas increased surface sediment mixing would retard the rate of recovery.

If necessary, the same analysis can be performed on a congener-specific basis to predict the rate of decline of specific target PCB congeners. A congener-specific analysis was not conducted for this study. The amount of time required to reach target treatment goals for each core is discussed with the age dating results in Section 6.0.

4.0 PCB COMPOSITIONAL CHANGES IN HISTORICALLY DEPOSITED SEDIMENTS

The PCB composition (i.e., the relative concentrations of PCB congeners) was investigated for each sample, in addition to the assessment of t-PCB concentrations. The composition was evaluated based on PCB homologue (i.e., level of chlorination) data and individual PCB congener data. Data tables in Appendix E include total PCB, PCB homologue, and individual PCB congener concentration data for each field sample used in the analysis discussed in this section. Appendix F includes PCB congener plots, and Appendix G includes homologue plots for each sample collected at Lake Hartwell, based on the data reported in Appendix E. PCB congener plots have been normalized to t-PCB concentrations for each sample and are presented as percent t-PCB.

PCB congeners are distinguished by the number and position of the chlorine atoms on the biphenyl molecule (Figure 4-1); a PCB congener can have from one to 10 chlorine atoms, and there are a total of 209 possible PCB congeners. Aroclor formulations are mixtures of approximately 50 different PCB congeners. Most environmental PCB contamination, which includes congeners resulting from environmental transformations, can be characterized by a little more than 100 well-selected congeners, whereas the remaining 100 or so “theoretically possible” congeners typically are not detected in the environment. The 107 PCB congeners quantified for this project typically comprise approximately 98%-99% of the total PCBs in most environmental samples.

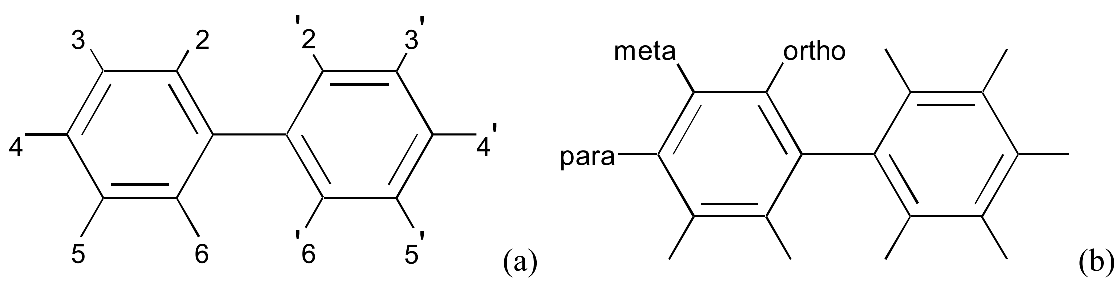

Figure 4-1. Biphenyl Molecule Showing (a) Ten Possible Chlorine Positions in IUPAC Position Numbers and (b) *ortho, meta,* and *para*¸chlorine substitution Positions

There are 10 PCB homologous series associated with the level of biphenyl chlorination, ranging from monochlorobiphenyls, which contain a single chlorine atom, to decachlorobiphenyl, which contains 10 chlorine atoms, one each on the 10 available positions on the biphenyl molecule. The PCB homologue concentrations were determined by calculating the sum of the concentrations of the individual PCB congeners for each of the 10 levels of chlorination.

Dechlorination, the removal of one or more chlorine substitutions on the PCB molecule, is one of the most important PCB contamination transformation processes in anaerobic sediments. In anaerobic dechlorination, the chlorines in the *meta* and *para* positions are generally most readily removed, and the *ortho*-substituted chlorines are widely recognized as being most resistant to anaerobic dechlorination.

The PCB composition of the field samples was studied to determine characteristic relationships attributable to factors such as the sampling location in the river (horizontal profile), sample depth (vertical profile), and the age of the sample determined through age dating. The PCB compositions were compared to known Aroclor formulations to examine the extent of PCB weathering and, if possible, to identify the source of contamination. However, direct comparison with Aroclor formulations was recognized to be of limited value, considering the significant age of most of the measured contaminants and the associated weathering and other transformation mechanisms that appear to have affected the PCB composition of the samples.

4.1 Core PCB Composition by Homologue Distribution (Level of Chlorination)

Figures 4-2 through 4-9 show PCB homologue distributions as a function of core depth, plotted on the x-axis of each figure, for each of the sample core locations at Lake Hartwell. The homologue distribution for each core was plotted as the percent of t-PCB for Cl 1 through Cl 10 homologues on the left y-axis and as the sum of percent of t-PCB on the right y-axis. In each figure, profile (a) represents the vertical distribution for PCBs with 1, 2 and 3 chlorines; profile (b) represents the vertical distribution for PCBs with 4, 5, and 6 chlorines, profile (c) represents the vertical distribution for PCBs with 7, 8, 9, and 10 chlorines; and profile (d) represents the percent level of silt and clay as a function of core depth. The homologue distributions for the individual segments are also plotted and shown in Appendix G. Appendix G also includes PCB homologue plots for the nine primary PCB Aroclor formulations (Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260, 1262, and 1268).

4.1.1 T-O Cores. At the T-O core locations (Figures 4-2, 4-3, and 4-4), the relative distribution of the PCB homologues shifted towards the less-chlorinated congeners with sediment depth and corresponding age of the deposited sediments. Tetrachlorobiphenyl and pentachlorobiphenyl congeners dominated the surface samples, whereas the deeper sediments were dominated by di- and trichlorobiphenyl congeners.

In Core T-O-A, this shift began at approximately 27.5 cm, with an increase in primarily the di- and trichlorobiphenyls and corresponding decrease in the tetra-, penta-, and hexachlorobiphenyls. The maximum levels of di- and trichlorobiphenyls were 28% and 30%, respectively, and occurred in the 52.5-57.5 cm range. Monochlorobiphenyl increased to 8.5% at this depth, compared to the surface sediments where it was approximately 1.5%. Between 0 and 30 cm, the homologue distributions were relatively constant.

PSD analyses conducted on each of the Core T-O-A segments indicated there were occurrences of sand within the deeper sections of the core. Figure 4-3d shows the highest level of sand to occur at depths 47.5 and 67.5 cm, and also within the deepest segment (97.5 cm). The higher sand content and correspondingly lower silt and clay contents may have impacted the dechlorination activity in the sediments.

In Core T-O-B, the shift from higher chlorinated to lesser-chlorinated PCBs began at 42.5 cm. At this depth, there was a significant decrease in the tetra-, penta-, and hexachorobiphenyls, with corresponding increases in the mono-, di-, and trichlorobiphenyls. The di- and trichlorobiphenyls both increased to 35% from 62.5 to 72.5 cm. Monochlorobiphenyl increased from 1.5% in the surface sediment to 9.0 % at a depth of 62.5 cm. The low and relatively flat t-PCB profile in the upper 20 to 40 cm of Core T-O-B suggest little dechlorination activity in the upper 42.5 cm of this core.

In Core T-O-C, the shift to the lower-chlorinated PCBs with increasing depth is also apparent, but occurs more gradually than in Core T-O-A. A significant increase in the di- and trichlorobiphenyls began at 27.5 cm and continued gradually to core depth (100 cm). However, the relative concentration of monochlorobiphenyl remained constant. There was a corresponding gradual decrease in the relative proportions of tetra-, penta, and hexachlorobiphenyls in the same depth range. There were no significant changes in the relative concentrations of the hepta-, octa-, nona-, and decachlorobipenyls.

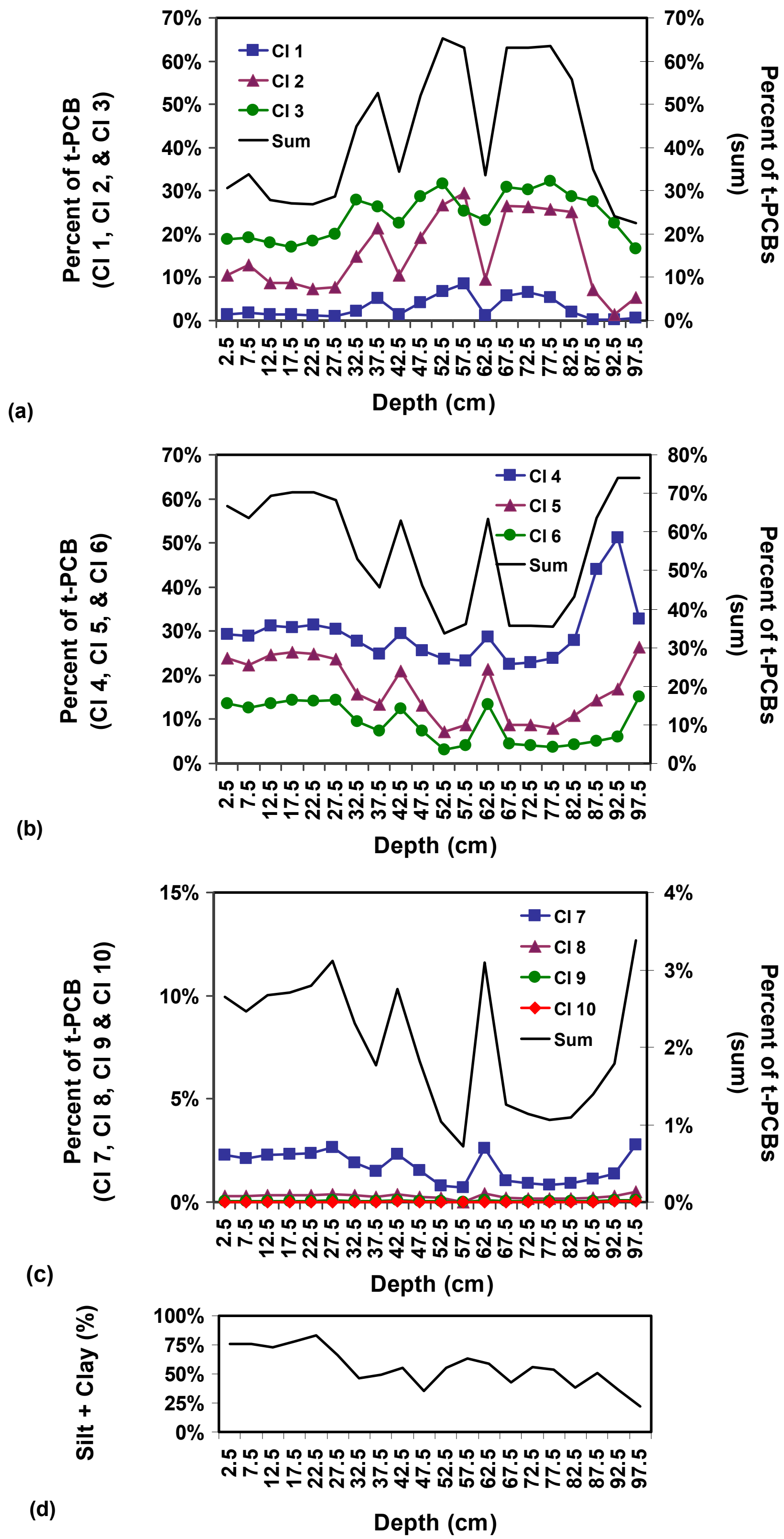

Figure 4-2. PCB Homologue Distribution by Depth for Core T-O-A; (a) PCBs (chlorines 1, 2, and 3); (b) PCBs (chlorines 4, 5, and 6); (c) PCBs (chlorines 7, 8, 9, 10); (d) Percent silt/clay by depth

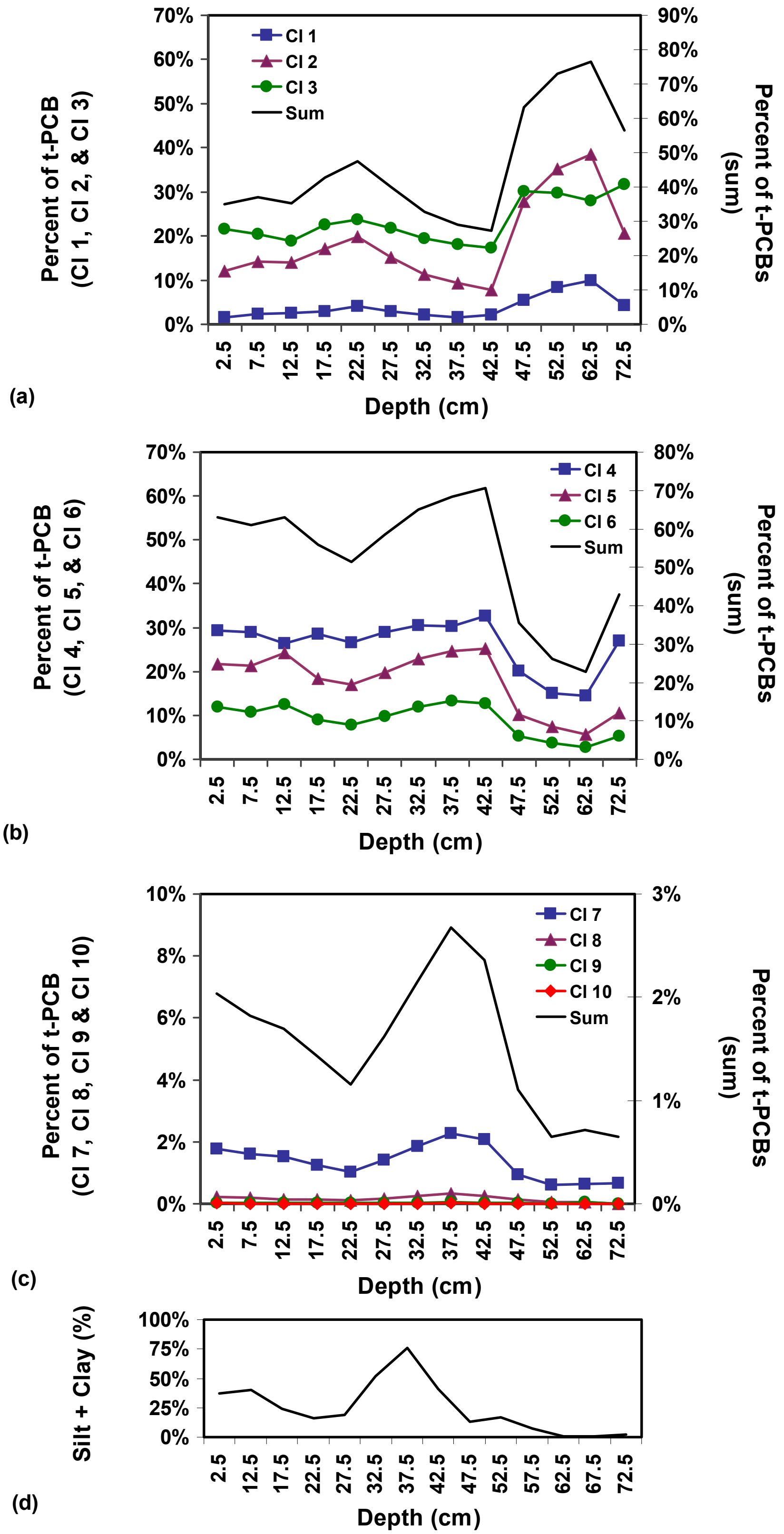

Figure 4-3. PCB Homologue Distribution by Depth for Core T-O-B; (a) PCBs (chlorines 1, 2, and 3); (b) PCBs (chlorines 4, 5, and 6); (c) PCBs (chlorines 7, 8, 9, 10); (d) Percent silt/clay by depth

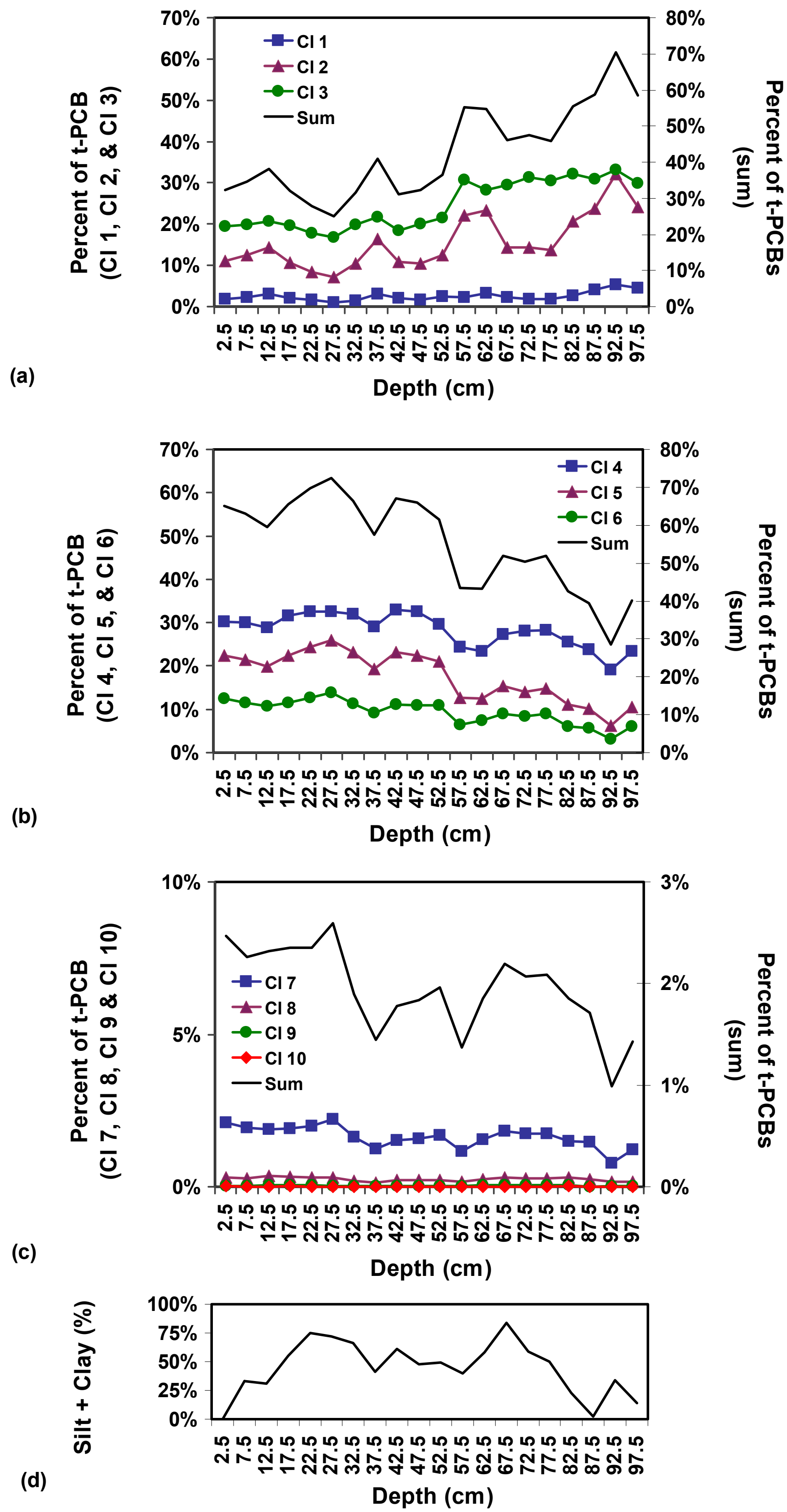

Figure 4-4. PCB Homologue Distribution by Depth for Core T-O-C; (a) PCBs (chlorines 1, 2, and 3); (b) PCBs (chlorines 4, 5, and 6); (c) PCBs (chlorines 7, 8, 9, 10); (d) Percent silt/clay by depth

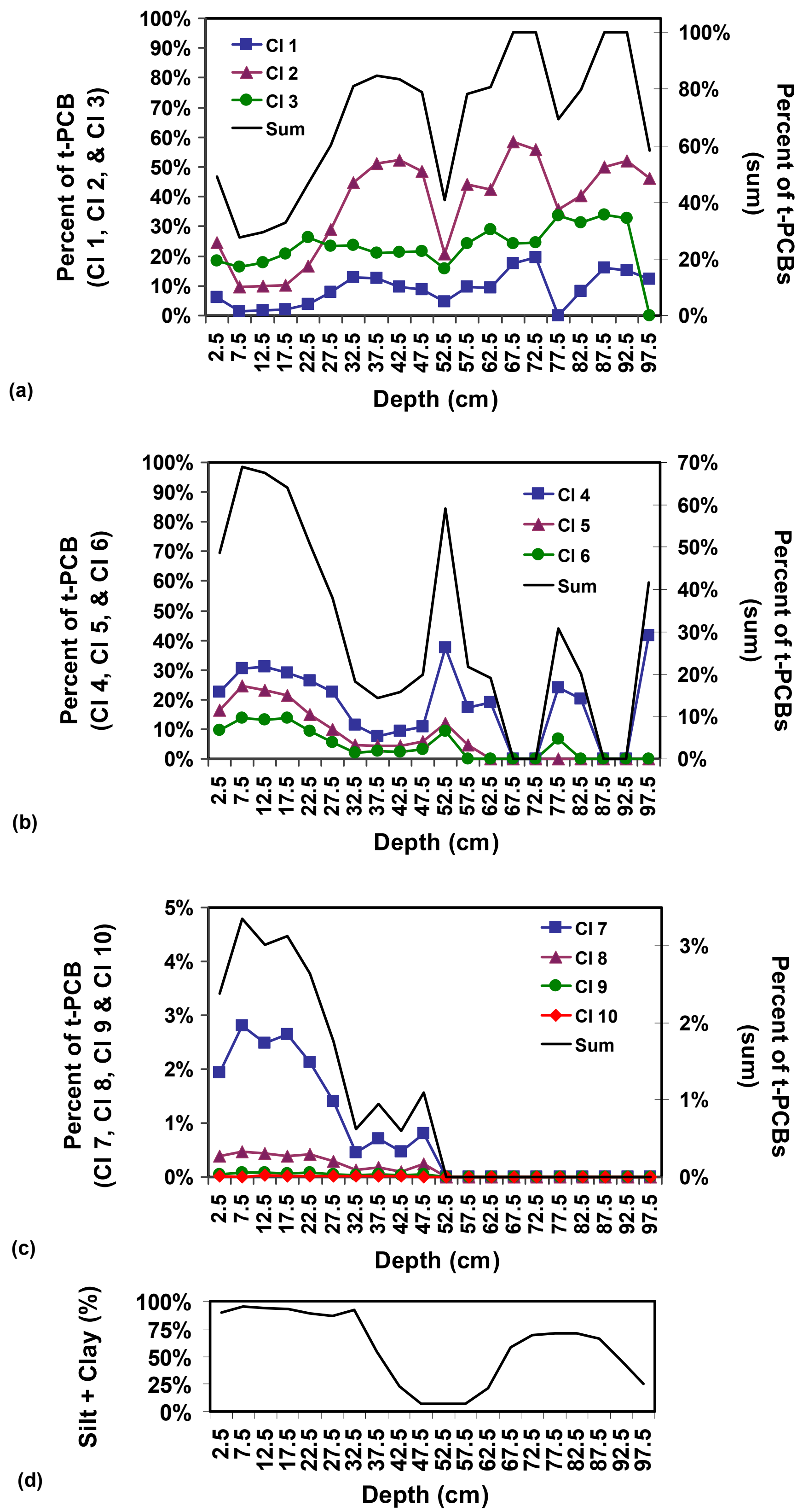

Figure 4-5. PCB Homologue Distribution by Depth for Core T-L-A; (a) PCBs (chlorines 1, 2, and 3); (b) PCBs (chlorines 4, 5, and 6); (c) PCBs (chlorines 7, 8, 9, 10); (d) Percent silt/clay by depth

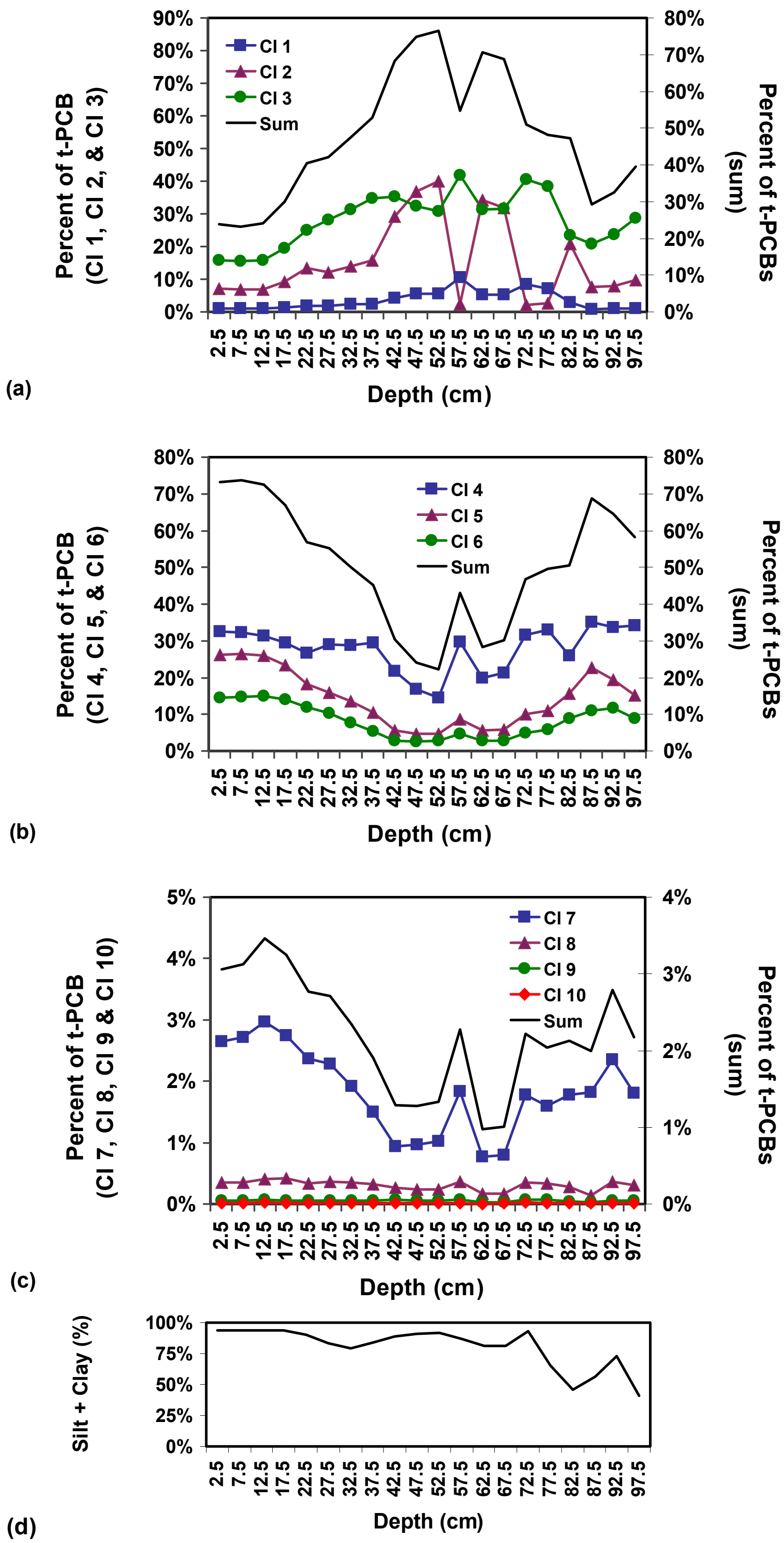

Figure 4-6. PCB Homologue Distribution by Depth for Core T-L-B; (a) PCBs (chlorines 1, 2, and 3); (b) PCBs (chlorines 4, 5, and 6); (c) PCBs (chlorines 7, 8, 9, 10); (d) Percent silt/clay by depth

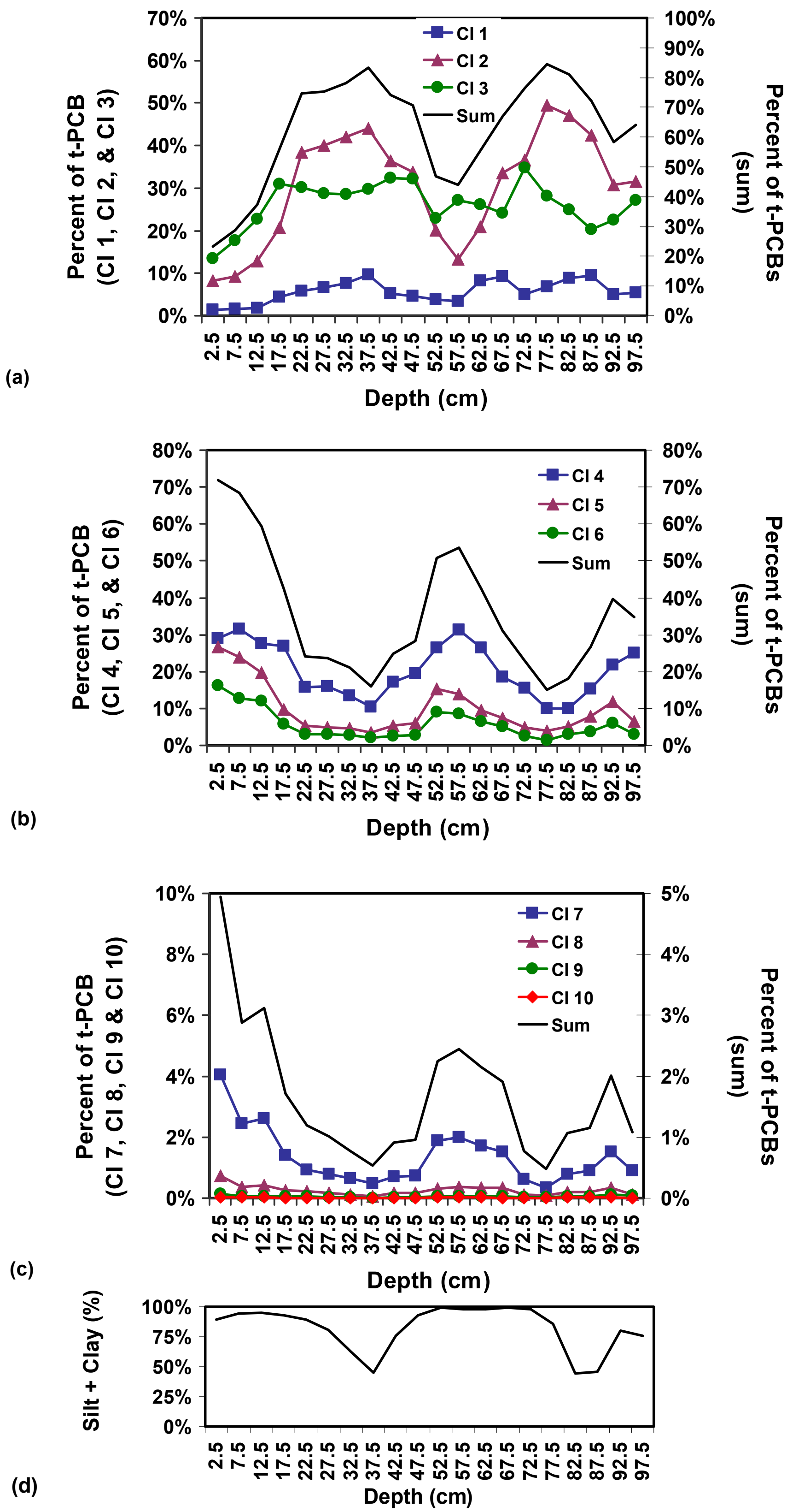

Figure 4-7. PCB Homologue Distribution by Depth for Core T-L-C; (a) PCBs (chlorines 1, 2, and 3); (b) PCBs (chlorines 4, 5, and 6); (c) PCBs (chlorines 7, 8, 9, 10); (d) Percent silt/clay by depth

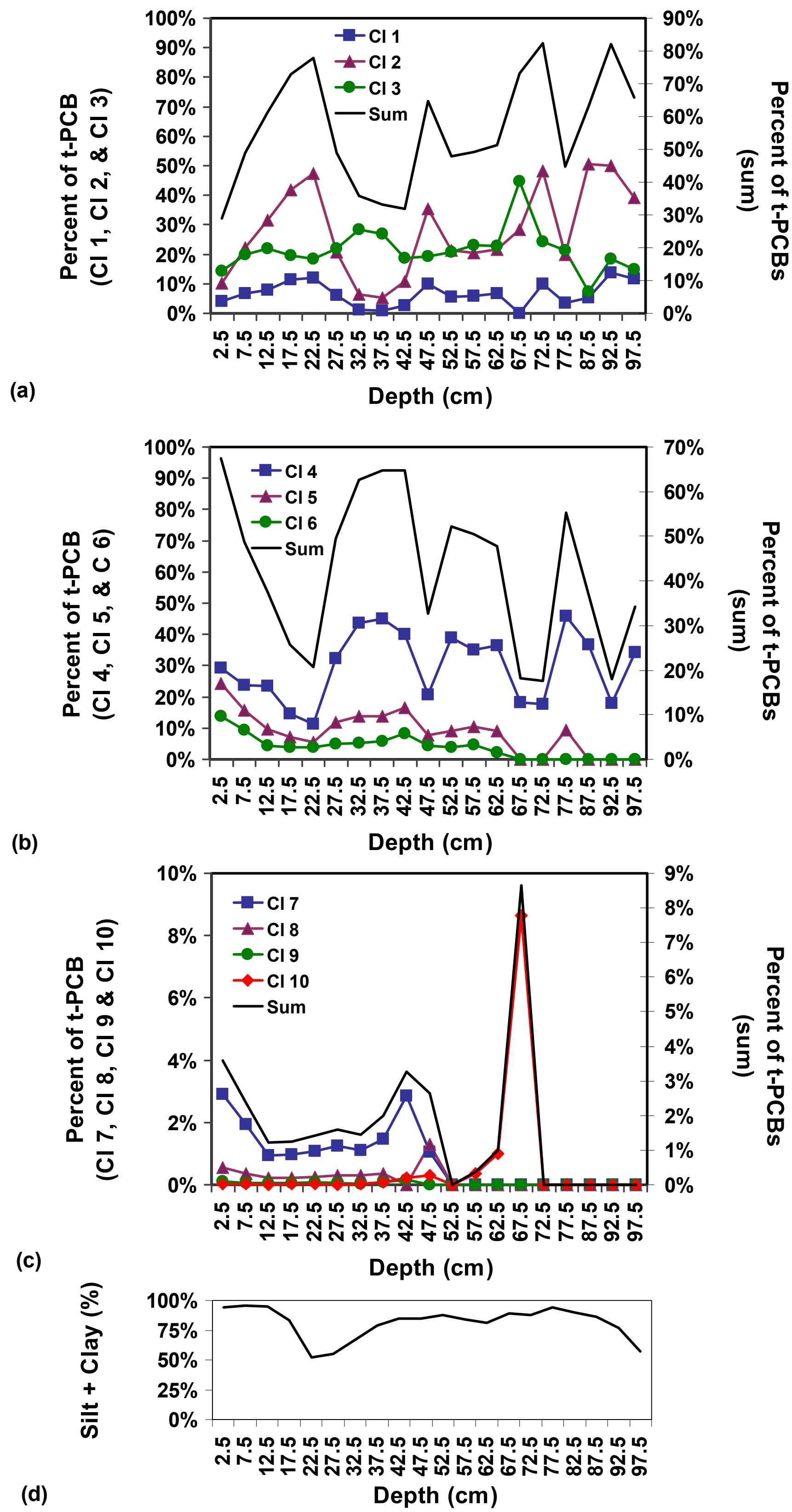

Figure 4-8. PCB Homologue Distribution by Depth for Core T-I-A; (a) PCBs (chlorines 1, 2, and 3); (b) PCBs (chlorines 4, 5, and 6); (c) PCBs (chlorines 7, 8, 9, 10); (d) Percent silt/clay by depth

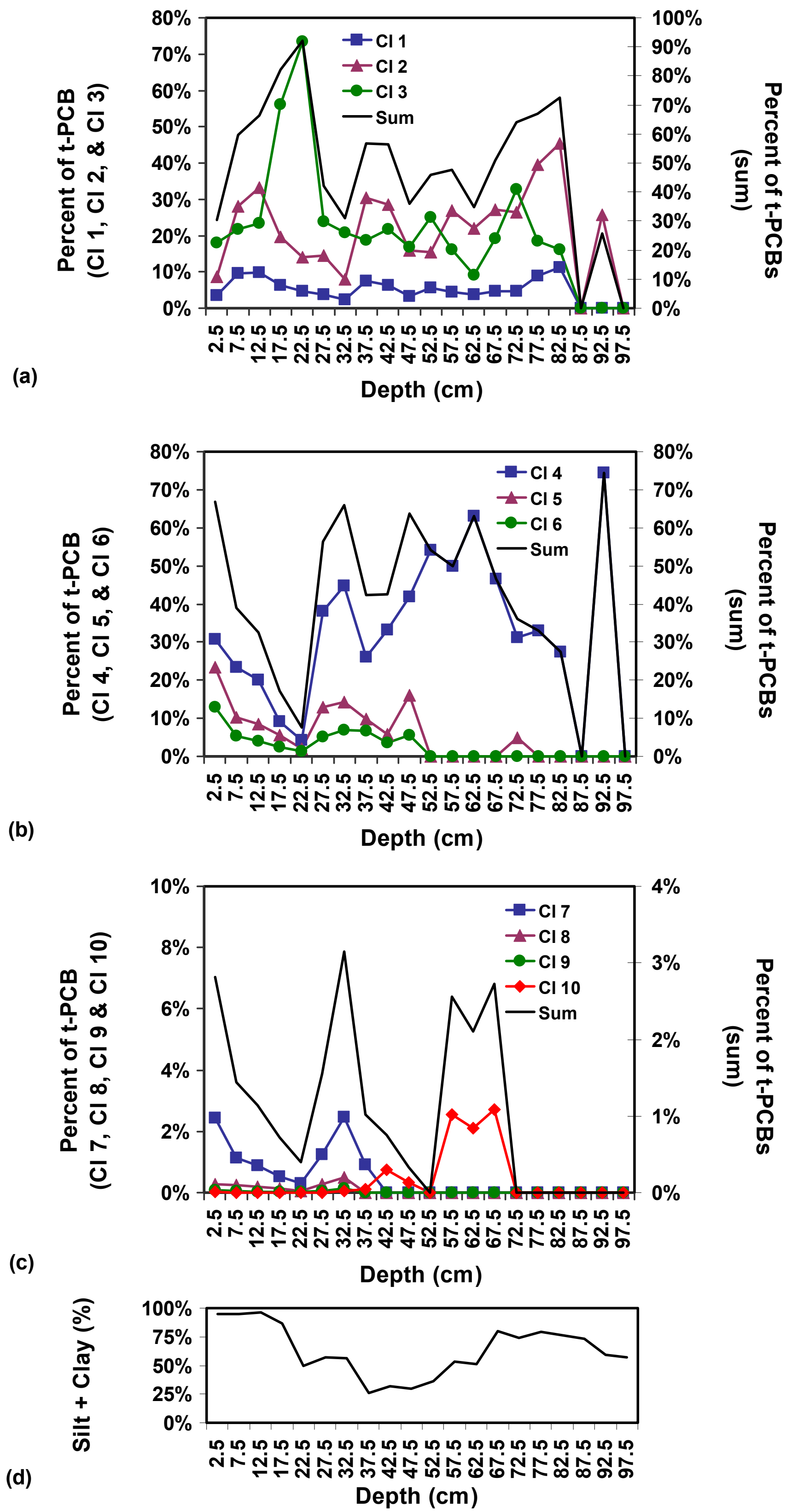

Figure 4-9. PCB Homologue Distribution by Depth for Core T-I-B; (a) PCBs (chlorines 1, 2, and 3); (b) PCBs (chlorines 4, 5, and 6); (c) PCBs (chlorines 7, 8, 9, 10); (d) Percent silt/clay by depth

4.1.2 T-L Cores. There was little difference in the PCB homologue distributions for the downgradient transects, T-L and T-I (Figures 4-5 through 4-9). In Core T-L-A, the surface sediments were composed mostly of the tetra-, and pentachlorobiphenyls. At 42.5 cm, the mono-, di-, trichlorobiphenyls, respectively, increased to 9%, 50%, and 21% of the t-PCB for T-L-A, contributing to 80% of t-PCB at this depth, compared to less than 30% at the 7.5-cm depth. Corresponding decreases were observed in the higher chlorinated PCBs, primarily the tetra-, penta-, and hexachlorobiphenyls. Similar trends were observed in Cores T-L-B and T-L-C.

At the T-L core locations (Figures 4-5, 4-6, and 4-7), the relative concentrations of the PCB homologues again shifted towards the less-chlorinated congeners with sediment depth and with the age of the deposited sediments.

In Core T-L-A, this shift began at approximately 17.5 cm, with a significant increase in primarily the dichlorobiphenyls, contributing approximately 55% of t-PCB at 67.5 cm. Trichlorobiphenyl and monochlorobiphenyl increased more gradually over the sediment depth profile, reaching maximum concentrations of 33% and 19% of t-PCB at 77.5 cm and 72.5 cm, respectively.

Tetra-, penta-, hexachlorobiphenyls decreased gradually over the 2.5 to 42.5 cm profile. Unlike the T-O cores, the T-L cores showed a more significant reduction of heptachlorobiphenyl. Heptachlorobiphenyl, through decachlorobiphenyl homologues, represented approximately 5% of t-PCB in the shallow sediments, and decreased gradually to nondetected levels at approximately 52.5 cm.

PSD analyses conducted on each of the Core T-L-A segments evidenced a predominance of sand beginning at 37.5 cm and continuing with increasing depth until sand made up approximately 90% of the core at depth 57.5 cm. A higher level of t-PCB variability occurred in this range, partly due to the increased sand content in this portion of the profile, and also due to the lower level of PCBs detected at this depth. Age dating results in the deeper portion of this profile suggests that sediments were from the precontamination era (see Figure 3-5).

In Core T-L-B, a gradual dechlorination shift began to occur at 12.5 cm. In the case of Core T-L-B, trichlorobiphenyl was the predominant lower-chlorinated species, followed by dichlorobiphenyls. Trichlorobiphenyl increased from approximately 18% at the sediment surface to approximately 38% t-PCB at 57.5 cm. Dichlorobiphenyls increased from 8% to 36% t-PCB at 52.5 cm, and monochlorobiphenyl increased only slightly in the 42.5-82.5 cm range. Tetrachlorobiphenyl decreased from approximately 32% at the 2.5-cm depth to approximately 16% t-PCB at the 52.5-cm depth. The sum of tetra through hexachlorobiphenyls decreased from approximately 70% at the surface to less than 25% at the 52.5-cm depth. Similarly, hepta- through decachlorobiphenyls decreased from ~4% to less than 2% of the t-PCB. The higher sand content observed at the deeper core section (82.5 cm) may account for the lower dechlorination activity in this range. The tetra-, penta-, and hexachloronated biphenyls accounted for approximately 69% of t-PCB detected at this depth.

In Core T-L-C, the shift to the lower-chlorinated PCBs with increasing depth is also apparent, and much like Core T-L-A, shows predominantly dichlorobiphenyl and trichlorobiphenyl formation. The shift is significant and begins immediately, at the 0-5 cm segment. The maximum formation of the lesser-chlorinated species occurs between 72.5 and 77.5 cm, where dichloro- and trichlorobiphenyl make up approximately 45% and 32% t-PCB at this depth, respectively. Corresponding decreases in tetra-, penta-, hexa-, and heptachlorobiphenyl also are observed (Figures 4-7b and 4-7c); however, dechlorination of the higher-chlorinated PCBs occurs primarily in the 22.5-37.5 cm depth range, and again at 77.5 cm. The peak dechlorination appears to correspond to the maximum t-PCB concentrations between 15 to 45 cm depth and between 65 and 90 cm depth.

4.1.3 T-I Cores. At T-I, Cores A and B exhibited similar dechlorination patterns. The transition from the higher-chlorinated PCBs to the lesser-chlorinated PCBs commenced immediately, at the sediment surface. Below 45 cm, only trace t-PCB concentrations were detected. These very low PCB concentrations account for the variability in data when plotted in Figures 4-8 and 4-9.

In Core T-I-A, dichlorobiphenyl was predominant and reached a maximum concentration of 47% t-PCB at 22.5 cm. Trichlorobiphenyl showed an increasing gradual trend in this range. Tetra-, penta-, hexa-, and heptachlorobiphenyl decreased correspondingly.

In Core T-I-B, there was a more rapid increase of dichlorobiphenyl in the first 12.5 cm of sediment, with corresponding rapid decreases of tetra-, penta-, hexa- and heptachlorobiphenyls in this range. At approximately 12.5 cm and continuing to 67.5 cm, a high occurrence of sand was noted, adding to the variability in the homologue data in this range.

4.1.4 Congener Profiles in Surface Sediments Collected at Stations C-0 and C-6. Surface samples taken at *Corbicula* locations C-0, C-2, and C-4 had very low t-PCB concentrations. Both samples collected at C-4 contained only chlorinated biphenyls at low concentrations (0.91 and 0.06 ng/g), and many congeners were below detection; therefore, these samples will not be discussed in this section. Samples collected at C-0, upstream of the Sangamo-Weston Plant, were dominated mostly by tetrachlorobiphenyls and pentachlorobiphenyls, but also had significant percentages of trichlorobiphenyls and hexachlorobiphenyls. Samples collected at C-2 were dominated by tetrachlorobiphenyls (76.67% in C-2A and 55.77% in C-2B). All surface sediment congener distribution plots can be found in Appendix F.

At location C-1, three of the four surface sediment samples (C-1A, C-1B, and C-1C) exhibited similar PCB homologue distributions; each of these samples were dominated by trichlorobiphenyls (42%-43%), followed by tetrachlorobiphenyls (36%-38%). Sample C-1D was comprised mostly of tetrachlorobiphenyls (42.60%). C-1D also had the lowest t-PCB concentration of the four C-1 samples.

All four samples collected at C-3 had similar PCB homologue distributions, despite differences in depths and t-PCB concentrations. Tetrachlorobiphenyls comprised between 37% to 42% of the t-PCB and pentachlorobiphenyls were approximately 33% of the t-PCB in all four samples. Samples at C-5 also had similar distributions with tetrachlorobiphenyls and pentachlorobiphenyls dominating the PCB homologue distributions. Sample C-5A had 34.58% pentachlorobiphenyls and 31.64% tetrachlorobiphenyls, and C-5B had 34.71% tetrachlorobiphenyls and 30.26% pentachlorobiphenyls.

The two surface samples taken at C-6 had similar homologue distributions despite a large difference in t-PCB concentration (3.84 ng/g in C-6A and 147 ng/g in C-6B). These two samples were comprised mostly of tetrachlorobiphenyls. Three of the samples collected at C-6 were taken at deeper depths: C-6D-1 (5-12 cm), C-6D-2 (20-27 cm), and C-6C-1 (40-52 cm). The level of chlorination in these samples appeared to decrease with increasing depth. C-6D-1 consisted mostly of tetrachlorobiphenyl and pentachlorobiphenyl, and C-6D-2 shifted to mostly tetrachlorobiphenyl and trichlorobiphenyls. Sample C-6C-1 was dominated by dichlorobiphenyls. This pattern suggests that some dechlorination may have occurred with increasing depth in the cores collected near C-6.

4.2 PCB Composition by Congener Distribution

Comparison of the distribution of all measured PCB congeners (i.e., not just homologues) can provide a more detailed comparison of PCB distributions in surface and buried sediments. Figure 4-10 depicts the distribution of Core T-L-C sections 1 and 8, corresponding with the 0-5 cm and 35-40 cm depth ranges for this core, respectively. Congener distributions are presented as relative concentrations (percent t-PCB) of the 107 measured congeners. Figure 4-10 also shows the relative differences in congener distributions between these samples. The relative differences between segments 1 and 8 were determined by subtracting the percent distribution in segment 8 from those in segment 1. Appendix F shows similar congener distribution plots for each of the core segments at each sample location. These distributions are organized firstly in order of the most upgradient location; secondly, in order of Core designation (i.e., A, B, or C); and thirdly, by depth (from surface to deeper segments). Appendix F also includes the PCB congener distribution plots for the nine primary Aroclor formulations.

Core T-L-C segment 1 was typical of the surface sediment congener distributions observed in the T-L core samples, and segment 8 was typical of the deeper sediment congener distribution that exhibited substantial PCB dechlorination. Table 4-1 summarizes some of the more significant congener distribution shifts in the reported depth profile for Figure 4-10. The PCB congener composition became increasingly dominated by lower-chlorinated congeners with sediment depth and corresponding age of the deposited sediments, which is consistent with changes observed in the homologue distribution profiles for the other core samples. A significant loss of tetra- (18%), penta- (23%), and hexachlorobiphenyl (14%) congeners occurred at depth (35-40 cm), accompanied by an accumulation of mono- (8.3%), di- (36%), and trichlorobiphenyls (16%).

The shift from higher- to lower-chlorinated congeners resulted in the accumulation of primarily *ortho*-chlorinated biphenyls, particularly 2,2′- and 2,6-dichlorobiphenyls, both of which have chlorines only in *ortho* positions; these two congeners resulted in a combined 32% increase. The predominant trichlorobiphenyl to accumulate at depth also was an *ortho*-chlorinated biphenyl, with chlorines in the 2, 2′, and 6 positions (PCB 19). If the two monochlorinated biphenyls included in the congener analysis (PCB 1 [2-MCB] and PCB 3 [4-MCB]) only 2-chlorobiphenyl (PCB 1) had a measurable increase.

PCB congeners 66, 70/76, and 74 were the most significant tetrachlorobiphenyl congeners exhibiting decreases. Of the pentachlorobiphenyls, congeners 95, 110, and 118 accounted for most of the decreases at 35-40 cm. PCB congeners 138/160/163 and 153 were the hexachlorobiphenyls that resulted in the most decrease at this depth, with changes of 4.0% and 2.4%, respectively. The overall negative percent change for the tetra-, penta-, and hexachlorobiphenyls was 56.1% (Table 4-1) for PCB congeners 66 through 156.

It is important to note that this analysis is based on the assumption that the Lake Hartwell sediments have seen a consistent PCB source historically so that normalized congener distributions in deeper sediments can be compared directly with those of the more shallow sediments. It is theoretically possible that the congener shifts observed between deeper and more shallow sediments are due to changes in the PCB source and not due to concentration shifts of individual congeners. However, the following data do not support this interpretation, and do support the initial interpretation that the congener shifts from higher to lower chlorinated PCBs, with sediment depth, represent PCB dechlorination:

- Sangamo-Weston reportedly used three Aroclors (1016, 1242, and 1254). Aroclors 1016 and 1242 have relatively high concentrations of lower-chlorinated biphenyls compared to Aroclor 1254. However, Aroclors 1016 and 1242 alone cannot account for the high concentrations of mono-, di-, and trichlorobiphenyls, such as those identified in Table 4-1. For example, the relative concentrations of PCBs 1, 4/10, 8/5, 16/32, 19, and 24/27 in Aroclor 1016 are approximately 0.68%, 3.8%, 8.6%, 6.5%, 1.0%, and 0.76%, respectively, which are significantly less than those measured in Core T-L-C at 35-40 cm. There are no historically reported Aroclor formulations that could account for the low-chlorinated, *ortho*-saturated PCB congener distributions observed in segment L-1-8.

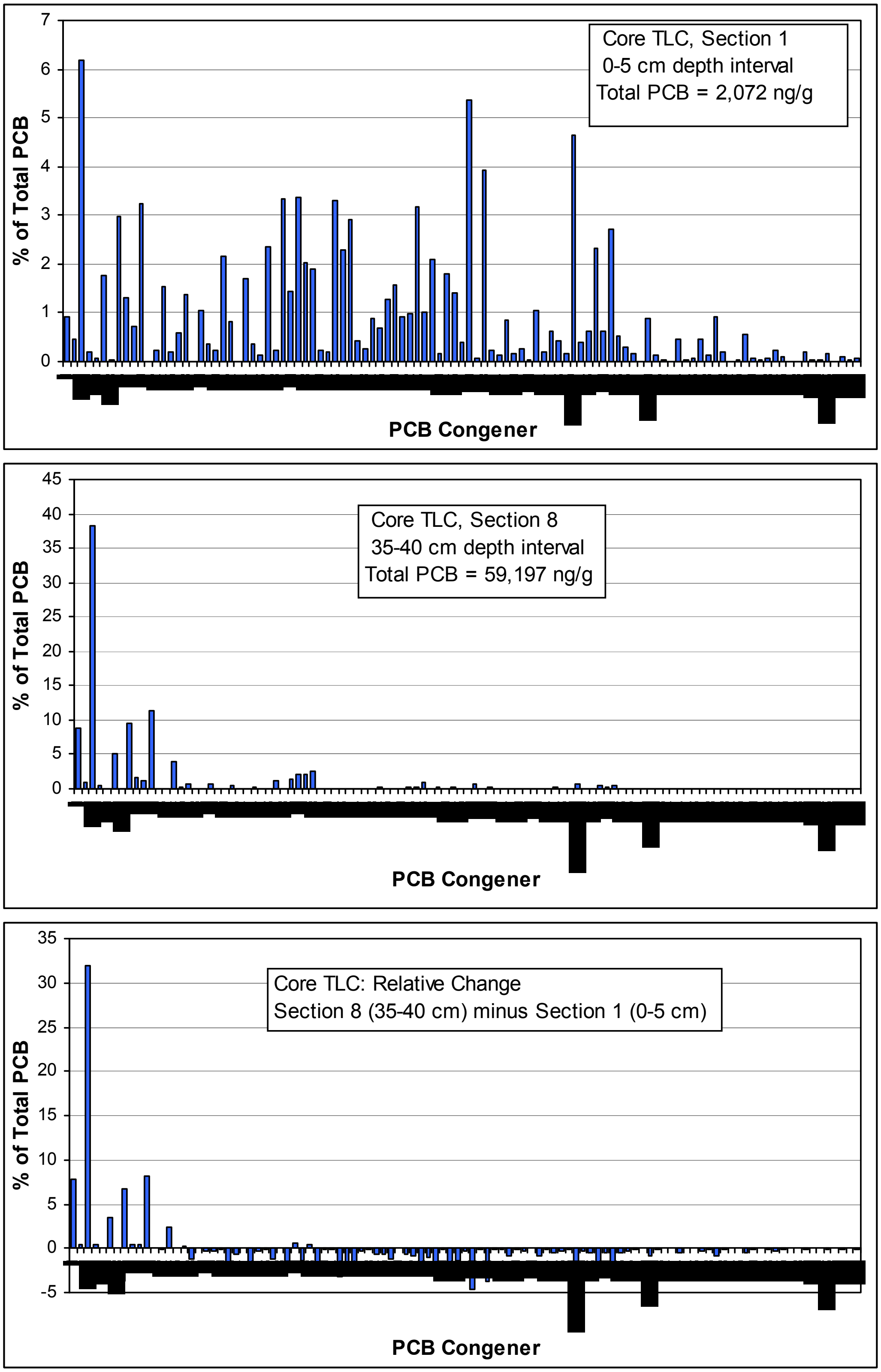

Figure 4-10. Congener Histograms from Core T-L-C for the 0-5 cm Interval and 35-40 cm Intervals and for the Relative Difference Between the 35-40 cm and 0-5 cm Intervals

Table 4-1. Major Congener Shifts Observed Between Core Segments L-1 and L-8

IUPAC No.	Congener Name[(a)]	Percent Change
PCB 1	2-chlorobiphenyl	+ 7.8
PCB 4/10	2,2′/2,6-dichlorobiphenyls	+ 32
PCB 8/5	2,4′/2,3-dichlorobiphenyls	+ 3.4
PCB 16/32	2,2′,3/2,4′,6-trichlorobiphenyls	+ 6.6
PCB 19	2,2′,6-trichlorobiphenyl	+ 8.1
PCB 24/27	2,3,6/2,3′,6-trichlorobiphenyls	+ 2.3
PCB 66 through 156	tetra- through hexachlorobiphenyls	- 70.6

(a) The 2, 2′,6, and 6′ positions represent *ortho*-chlorine positions; the 3,3′, 5, and 5′ positions represent *meta* positions; and 4 and 4′ positions represent *para* positions.

- The trend from higher- to lower-chlorinated congeners is relatively gradual from the more shallow to deeper sediments, suggesting that the dechlorination process has occurred over time. If changes in Aroclor use at the Sangamo-Weston plant had occurred, a more rapid transition from higher- to lower-chlorinated congeners should be observed.

- Knowledge of PCB dechlorination suggests that the dechlorination of higher-chlorinated congeners to form lower-chlorinated congeners is relatively common in the natural environment. The distribution patterns of the deeper sediments, which are dominated by *ortho*-chlorinated congeners, matches dechlorination patterns reported in the literature, where the dechlorination of *meta*- and *para*-chlorines is preferred.

The PCB congener compositional analysis revealed the same horizontal characteristics as the PCB homologue data; the upgradient locations had distributions and trends that were similar to the downgradient locations (Appendix G). The sediments close to the surface had a PCB congener distribution centered around higher-molecular-weight tetrachlorobiphenyls (approximately around PCB 66), but with significant contributions of key congeners ranging from di- through hexachlorobiphenyls. Major congeners (each generally comprising between 2% and 6% of the t-PCBs) included the dichlorobiphenyl PCB 4/10; the trichlorobiphenyls PCB 16/32 and PCB 19; the tetrachlorobiphenyls PCB 41, PCB 47, PCB 49, PCB 52, PCB 66, and PCB 70/76; the pentachlorobiphenyls PCB 95, PCB 101/90, PCB 110, and PCB 118; and the hexachlorobiphenyls PCB 138/160/163, PCB 149, and PCB 153.

5.0 POLYTOPIC VECTOR ANALYSIS OF LAKE HARTWELL PCB DISTRIBUTION

The PCB data generated for this study were modeled using the multivariate statistical method known as polytopic vector analysis (PVA). PVA is a valuable tool for chemical fingerprinting in complex multisource/multiprocess environmental systems. For this study, PVA was conducted to identify fingerprint patterns, also known as end-member (EM) compositions, from the congener data generated for Lake Hartwell, and to compare the end members with literature-reported source patterns and weathered patterns (e.g., Aroclor compositions and known PCB dechlorination or weathering patterns). This analysis was conducted by Dr. Glenn W. Johnson at the Energy and Geoscience Institute, Department of Civil and Environmental Engineering, University of Utah. Data analysis methods were conducted as outlined by Johnson et al. (2000; 2002).

The PVA algorithm has evolved over 40 years, primarily within the mathematical geology literature. The conceptual model involves resolution of three parameters of concern in a complex, mixed system: (1) the number of components (i.e., fingerprints or EMs) in the system; (2) the chemical composition of each EM; and (3) the relative proportions of each EM in each sample. The analysis is performed in two steps. In Step 1, the number of components in the system is determined through principal component analysis (PCA) and subsequent goodness-of-fit analysis. In Step 2, an iterative process is used to determine chemical EM compositions and the mixing proportions in each sample.

A major advantage of this fingerprinting approach is that it does not require *a priori* assumptions of the number, chemical composition, or geographic distribution of the contributing fingerprints. EM patterns generated using this method are derived directly from ambient data and are not selected to fit assumed patterns as represented in a preexisting library of suspected sources or alteration patterns. In other words, EMs are not deliberately generated such that they match specific, suspected source patterns (e.g., Aroclors). The overriding philosophy of such an approach is that the model must be faithful to the ambient data first, and to preconceived assumptions of source and alteration patterns second.

5.1 Data Preprocessing/Data Reduction

The data used for this analysis included results from both the 2000 Lake Hartwell sampling effort (Battelle, 2001b) and the 2001 sampling event described in this report. Data from 2000 included 102 sediment (n = 102) samples from 10 cores along the center axis of Lake Hartwell (Figure 5-1). The 2001 sample locations are shown in Figure 5-2, and included the three T-O cores, three T-L cores, and two T-I cores. This sampling effort resulted in 151 sediment samples (m = 151) from the eight cores. Surface sediment samples collected from upstream locations in Twelvemile Creek, extending to the Sangamo-Weston site (Samples C-0 through C-6) included grab samples (m = 14) collected at the sediment/water interface and hand-cored samples (m = 7) from among the same locations.

Low surrogate recoveries identified in a subset of the original samples required reextraction and analysis of this sample subset. Re-extracted samples included: C3A, T-L-C-4, T-L-C-8, T-O-A-17, T-L-A-4, T-L-B-5, T-I-B-6, T-I-B-7, T-I-B-8, T-I-B-9, T-I-B-10, T-I-B-12, T-I-B-13, T-I-B-14, T-I-A-16, T-I-A-16 (Duplicate). Initial models were run using the revised data.

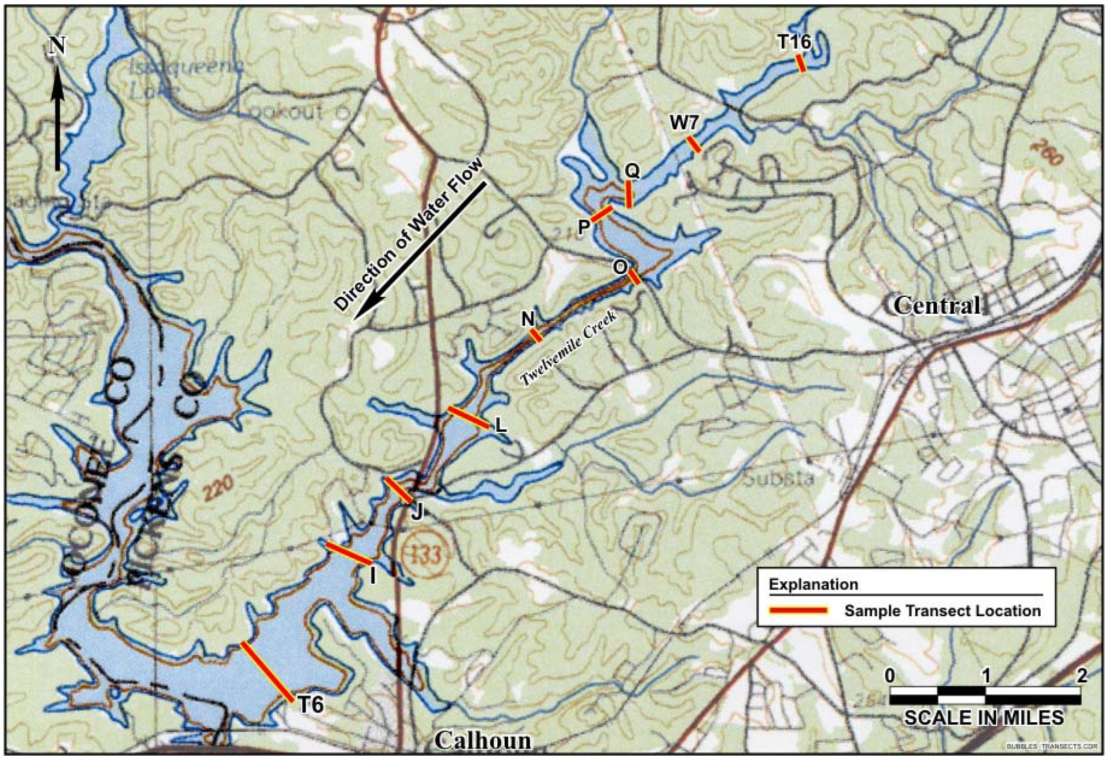

Figure 5-1. Location of Battelle 2000 Sediment Cores

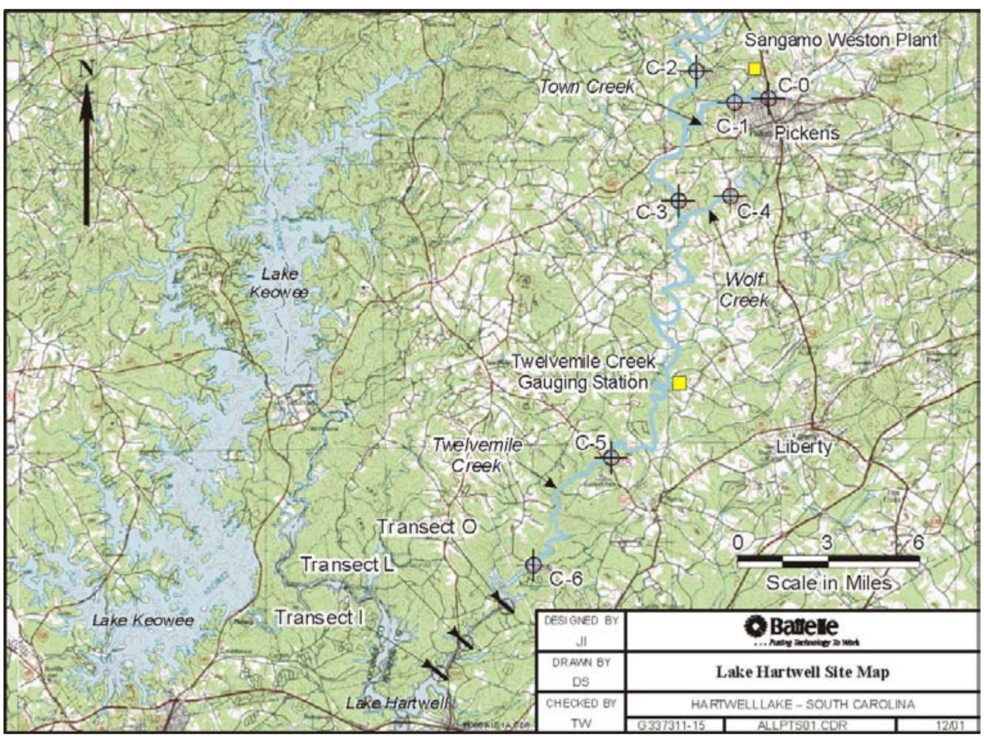

Figure 5-2. Location of Battelle 2001 Cores, Surface Sediment, and Water Samples.
(Transects O, L, and I correspond to locations O, L, and I on Figure 5-1)

Using the sediment-only data, the matrix input for PVA from both sampling events consisted of 274 samples and 107 congeners. In PVA modeling, it is usually necessary to reduce a data set to a robust matrix of high concentration samples with relatively few nondetects. The 274 by 107 matrix was reduced first by removing all samples with <50 ng/g t-PCB concentration (summed concentrations for 107 peaks). The 50 ng/g-cutoff criterion resulted in the elimination of 57 of the 274 samples. The samples deleted by this criterion are shown in Table 5-1. The majority of these samples (33 of 57) were from 2001 cores, and were collected from the deeper portions of those cores.

Table 5-1. Samples Removed from the PVA Analytical Matrix Due to Low t-PCB Concentrations

Sample ID	Year Collected	t-PCB (ng/g)	Depth (cm)	Age Date	Sample ID	Year Collected	t-PCB (ng/g)	Depth (cm)	Age Date
T6-7	2000	48	30-35	1951	T-L-A-15	2001	1	70-75	N/A
T6-8	2000	30	35-40	1937	T-L-A-16	2001	1	75-80	N/A
T6-9	2000	26	40-45	N/A	T-L-A-17	2001	2	80-85	N/A
T6-10	2000	2	45-50	N/A	T-L-A-18	2001	0	85-90	N/A
T16-1	2000	24	0-10	N/A	T-L-A-19	2001	0	90-95	N/A
T16-3	2000	41	40-50	N/A	T-L-A-20	2001	0	95-100	N/A
T16-4	2000	14	55-65	N/A	T-L-C-9	2001	21	40-45	N/A
W7-3	2000	24	57-68	N/A	T-I-A-11	2001	21	50-55	N/A
W7-4	2000	41	68-81	N/A	T-I-A-12	2001	45	55-60	N/A
W7-5	2000	49	81-91	N/A	T-I-A-13	2001	17	60-65	N/A
Q-8	2000	30	93-103	N/A	T-I-A-14	2001	2	65-70	N/A
P-10	2000	35	125-135	N/A	T-I-A-15	2001	4	70-75	N/A
L-17	2000	44	80-85	1939	T-I-A-18	2001	2	85-90	N/A
S1 C-0A	2001	4	5-15	2001	T-I-A-19	2001	4	90-95	N/A
S1 C-0B	2001	13	20-30	2001	T-I-A-20	2001	4	95-100	N/A
S1 C-2A	2001	1	20-27	2001	T-I-B-8	2001	48	35-40	N/A
S1 C-2B	2001	4	0-5	2001	T-I-B-9	2001	9	40-45	N/A
S1 C-3B	2001	23	0-5	2001	T-I-B-10	2001	11	45-50	N/A
S1 C-4A	2001	0	0-5	2001	T-I-B-11	2001	12	50-55	N/A
S1 C-4B	2001	0	0-5	2001	T-I-B-12	2001	3	55-60	N/A
S1 C-6A	2001	4	0-5	2001	T-I-B-13	2001	2	60-65	N/A
S2 C3-C1	2001	9	0-5	2001	T-I-B-14	2001	3	65-70	N/A
S2 C3-D1	2001	11	0-5	2001	T-I-B-15	2001	5	70-75	N/A
S2 C6-D2	2001	11	0-5	2001	T-I-B-16	2001	4	75-80	N/A
T-O-A-12	2001	39	55-60	N/A	T-I-B-17	2001	4	80-85	N/A
T-L-A-11	2001	11	50-55	N/A	T-I-B-18	2001	0	85-90	N/A
T-L-A-12	2001	11	55-60	N/A	T-I-B-19	2001	1	90-95	N/A
T-L-A-13	2001	4	60-65	N/A	T-I-B-20	2001	0	95-100	N/A
T-L-A-14	2001	1	65-70	N/A					

All surface sediment samples from the tributaries of Twelvemile Creek (C-2 and C-4), and the C-0 samples upgradient of Sangamo Weston yielded low t-PCB concentrations (ΣPCB <15 ng/g) and were eliminated from the matrix. The 50 ng/g-total concentration criterion reduced the data set to 217 sediment samples with 107 peaks.

The data QA/QC qualifiers also were used to reduce the data matrix. All congeners that were flagged with a "U" qualifier (nondetect) in more than 5 samples were removed from the analysis. This resulted in removal of 49 congeners and a retained matrix of 217 samples and 58 congeners. For the most part, data flagged with "J" qualifiers did not appear to adversely affect the model, with one notable exception. PCB184 was reported as nondetect in only 2 of the 97 samples, but had "J" value data points (detected, but below MDLs) across its entire range. Goodness-of-fit diagnostics indicated that this analyte could not be back-calculated from principal component space with fidelity. As such, PCB184 was removed from the data set.

In the 2000 model, one of the derived fingerprints was very similar to a dechlorination pattern reported by Quensen et al. (1990). Quensen did not report as many congeners as did the Battelle laboratory. For this reason, three additional congeners were removed from the Twelvemile Creek data set so that the Twelvemile Creek data would be directly comparable to Quensen et al. (1990); the three removed congeners included PCB84, PCB92, and PCB128.

Outlier identification was conducted as outlined by Johnson et al. (2002). For the 2000 data, several outliers were identified, reported to Battelle-Duxbury, and ultimately removed from the data matrix (Battelle, 2001b). The removed outlier samples from the 2000 sampling event included the following: Q-3, T6-6, T16-5, W7-8, W7-9, and W7-10. Outliers also were identified in the data from 2001 sampling. In preliminary PVA runs, two outlier samples were identified. These samples were highlighted and brought to the attention of Battelle-Duxbury. Reported concentrations of PCB17 in TIB-4 and PCB16/32 in TIB-5 were both anomalously high. Review of laboratory QA/QC material indicated that these concentrations were indeed in error due to a mathematical error in calculating dilution factors. The data were corrected and resubmitted, and preliminary PVA models were run again. A second group of outliers was identified, summarized, and forwarded to Battelle-Duxbury. Laboratory QA/QC personnel at Battelle-Duxbury could find no errors in these samples, and the data were left intact.

Finally, in preliminary PVA models, PCB40 was observed to have had a very poor fit. According to Battelle-Duxbury, no QA/QC problems could be identified for this outlier congener, but in the interest of obtaining a robust data set, PCB40 was removed from the analysis. Its removal does not imply that the PCB40 data are invalid, just unique with respect to the data set as a whole. If further analyses are conducted beyond this scope of work, it may be useful to scrutinize PCB40 in greater detail.

The data processing steps above resulted in an input matrix composed of 211 samples (Table 5-2) and 54 PCB peaks (Table 5-3). All concentrations were normalized to t-PCB concentrations as percentages. This is important, because it removes congener concentration as a variable in the analysis. For t-PCB concentrations, the reader is referred to Section 3.0 of this report.

5.2 Number of Fingerprints

The first step in PVA is the determination of the number of end-members (i.e., the number of unique fingerprint patterns) contributing to the system. For example, given a mixture of two Aroclors and no alteration processes, the resolution of two end-member patterns would be expected with all samples represented as linear combinations of the two Aroclors. However, if one of the Aroclors exhibited extensive weathering, a third (or more) "weathered" end-member pattern(s) could appear.

Table 5-2. Samples Included in the Final PVA Model

Number	Sample ID	Number	Sample ID	Number	Sample ID	Number	Sample ID	Number	Sample ID
1	T6-1	44	L-2	87	S1C-5A	130	T-O-C-5	173	T-L-B-18
2	T6-2	45	L-3	88	S1C-5B	131	T-O-C-6	174	T-L-B-19
3	T6-3	46	L-4	89	S1C-6B	132	T-O-C-7	175	T-L-B-20
4	T6-4	47	L-5	90	S2C1A	133	T-O-C-8	176	T-L-C-1
5	T6-5	48	L-6	91	S2C1B	134	T-O-C-9	177	T-L-C-2
6	T16-2	49	L-7	92	S2C6-C1	135	T-O-C-10	178	T-L-C-3
7	T16-6	50	L-8	93	S2C6-D1	136	T-O-C-11	179	T-L-C-4
8	T16-7	51	L-9	94	T-O-A-1	137	T-O-C-12	180	T-L-C-5
9	T16-8	52	L-10	95	T-O-A-2	138	T-O-C-13	181	T-L-C-6
10	T16-9	53	L-11	96	T-O-A-3	139	T-O-C-14	182	T-L-C-7
11	T16-10	54	L-12	97	T-O-A-4	140	T-O-C-15	183	T-L-C-9
12	W7-1	55	L-13	98	T-O-A-5	141	T-O-C-16	184	T-L-C-10
13	W7-2	56	L-14	99	T-O-A-6	142	T-O-C-17	185	T-L-C-11
14	W7-6	57	L-15	100	T-O-A-7	143	T-O-C-18	186	T-L-C-12
15	W7-7	58	L-16	101	T-O-A-8	144	T-O-C-19	187	T-L-C-13
16	W7-11	59	J-1	102	T-O-A-9	145	T-O-C-20	188	T-L-C-14
17	Q-1	60	J-2	103	T-O-A-10	146	T-L-A-1	189	T-L-C-15
18	Q-2	61	J-3	104	T-O-A-11	147	T-L-A-2	190	T-L-C-16
19	Q-4	62	J-4	105	T-O-A-13	148	T-L-A-3	191	T-L-C-17
20	Q-5	63	J-5	106	T-O-A-14	149	T-L-A-4	192	T-L-C-18
21	Q-6	64	I-1	107	T-O-A-15	150	T-L-A-5	193	T-L-C-19
22	Q-7	65	I-2	108	T-O-A-16	151	T-L-A-6	194	T-L-C-20
23	Q-9	66	I-3	109	T-O-A-17	152	T-L-A-7	195	T-I-A-1
24	Q-10	67	I-4	110	T-O-A-18	153	T-L-A-8	196	T-I-A-2
25	P-1	68	I-5	111	T-O-A-19	154	T-L-A-9	197	T-I-A-3
26	P-2	69	I-6	112	T-O-A-20	155	T-L-A-10	198	T-I-A-4
27	P-3	70	I-7	113	T-O-B-1	156	T-L-B-1	199	T-I-A-5
28	P-4	71	I-8	114	T-O-B-2	157	T-L-B-2	200	T-I-A-6
29	P-5	72	I-9	115	T-O-B-3	158	T-L-B-3	201	T-I-A-7
30	P-6	73	I-10	116	T-O-B-4	159	T-L-B-4	202	T-I-A-8
31	P-7	74	I-11	117	T-O-B-5	160	T-L-B-5	203	T-I-A-9
32	P-8	75	O-1	118	T-O-B-6	161	T-L-B-6	204	T-I-A-10
33	P-9	76	O-2	119	T-O-B-7	162	T-L-B-7	205	T-I-B-1
34	N-1	77	O-3	120	T-O-B-8	163	T-L-B-8	206	T-I-B-2
35	N-2	78	O-4	121	T-O-B-9	164	T-L-B-9	207	T-I-B-3
36	N-3	79	O-5	122	T-O-B-10	165	T-L-B-10	208	T-I-B-4
37	N-4	80	O-6	123	T-O-B-11	166	T-L-B-11	209	T-I-B-5
38	N-5	81	O-7	124	T-O-B-13	167	T-L-B-12	210	T-I-B-6
39	N-6	82	O-8	125	T-O-B-15	168	T-L-B-13	211	T-I-B-7
40	N-7	83	O-9	126	T-O-C-1	169	T-L-B-14		
41	N-8	84	S1C-1A	127	T-O-C-2	170	T-L-B-15		
42	N-9	85	S1C-1B	128	T-O-C-3	171	T-L-B-16		
43	L-1	86	S1C-3A	129	T-O-C-4	172	T-L-B-17		

Table 5-3. Congeners Included in the PVA Model

IUPAC Nomenclature	Structural Nomenclature	IUPAC Nomenclature	Structural Nomenclature
PCB1	2	PCB63	235-4
PCB3	4	PCB66	24-34
PCB4/10	2-2,26	PCB70/76	25-34,345-2
PCB6	2-3	PCB74	245-4
PCB7/9	24,25	PCB91	236-24
PCB8/5	2-4,23	PCB95	236-25
PCB16/32	23-2,26-4	PCB97	245-23
PCB17	24-2	PCB99	245-24
PCB18	25-2	PCB101/90	245-25,235-24
PCB19	26-2	PCB105	234-34
PCB22	23-4	PCB110	236-34
PCB24/27	236,26-3	PCB118	245-34
PCB25	24-3	PCB132	234-236
PCB26	25-3	PCB135/144	235-236,2346-25
PCB28	24-4	PCB136	236-236
PCB31	25-4	PCB138/160/163	234-245,23456-3,2356-34
PCB41/64/71	234-2,236-4,26-34	PCB141	2345-25
PCB42	23-24	PCB146	235-245
PCB44	23-25	PCB149	236-245
PCB45	236-2	PCB151	2356-25
PCB47/75	24-24,246-4	PCB153	245-245
PCB49	24-25	PCB156	2345-34
PCB51	24-26	PCB170/190	2345-234,23456-34
PCB52	25-25	PCB174	2345-236
PCB53	25-26	PCB177	2356-234
PCB56/60	23-34,234-4	PCB180	2345-245
PCB59	236-3	PCB187/182	2356-245,2345-246

Determination of the number of end members is accomplished by evaluating the number of significant principal components. Criteria used include the normalized loadings method of Ehrlich and Full (1987), the signal-to-noise criterion of Henry et al. (1999), and inspection of goodness-of-fit indices and scatter-plots as described by Miesch (1976) and Johnson et al. (2000; 2002). The scatter-plots are relied on most. For each potential number of end-members (i.e., two end-members, three end-members, etc.), the estimated data matrix is compared to the original data matrix on a congener-by-congener basis. For each congener, the back-calculated concentrations are compared to the measured analyte concentrations for "goodness of fit." Given a perfect fit, all data points will plot on a 1:1 slope, and the Miesch coefficient of determination (CD; an r^2 value calculated with respect to the 1:1 fit line) (Miesch, 1976) will be 1.0.

Goodness-of-fit diagnostics were in good agreement, indicating at least a four-component system (Figure 5-3). The four end-member model (i.e., four principal component model) could back-calculate a majority of the 54 congeners with fidelity (Figure 5-3). Most PCB peaks yielded scatter plots with good fit about the 1:1 line (the 1:1 line represents perfect back-calculation). Only one PCB peak yielded a CD less than 0.5; that congener was PCB16/32 (CD = 0.4). However, this congener, although never reported as a nondetect, was otherwise qualified in nearly half of the samples (e.g., J "estimated concentration" or D "dilution"). Other deviations from good fit are observed on Figure 5-3. Many of these also appear related to qualified data points.

Although the results shown in Figure 5-3 indicate that a four-component model was defensible, the feasibility of a five-component (five end-member) system also was evaluated. The resulting fifth end-member profile appeared to be an intermediate of a dechlorination pattern resolved in the four end-member model, suggesting that the field data were best represented by a four-component system. The reader is referred to Johnson and Quensen (2000) for discussion of the impact of dechlorination on linear mixing models.

5.3 Fingerprint Compositions and Geographic Temporal Distributions

After conducting the goodness-of-fit diagnostics, and establishing a four-End-Member model, the data set was analyzed to resolve the fingerprint compositions and mixing proportions using the second part of the PVA algorithm (Full et al., 1981a and 1981b; Johnson et al., 2002). A four end-member model did not converge; that is, the model could not be resolved whereby all the samples were within the default 5% negative convergence criteria described by Full et al. (1981b). The model came closest to converging following the ninth iteration, where 19 of the 211 samples had mixing proportions outside the 5% convergence criteria and the worst case negative mixing proportion was 12%. Applying PVA to field-derived PCB data sets, particularly those impacted by dechlorination, commonly results in models that cannot be resolved within the default 5% convergence criteria (Johnson and Quensen, 2000); nonetheless, the resultant models were still interpretable and provided valuable insight into sources and contaminant fate and transport.

Interpretation of end-member patterns was accomplished by comparison to reference data sets, including: (1) Aroclor compositions provided by Battelle; (2) Aroclor compositions reported by Frame et al. (1996); and (3) PCB patterns resulting from environmental fate processes such as dechlorination and volatilization (Chiarenzelli et al., 1997; Johnson and Chiarenzelli, 2000; Bedard and Quensen, 1995; Johnson and Quensen, 2000). The chemical composition, geographic/temporal distribution, and interpretations for each end-member fingerprint (EM-1, EM-2, EM-3, and EM-4) are discussed in following subsections.

Using only the 2000 data set (Battelle, 2001b), a three (rather than four) end-member model was resolved. Three of the four end-members in the new model using the 2000 and 2001 data sets exhibited very similar chemical compositions to the original three end-members. The compositions of EM-1 through EM-4 are shown in Table 5-4.

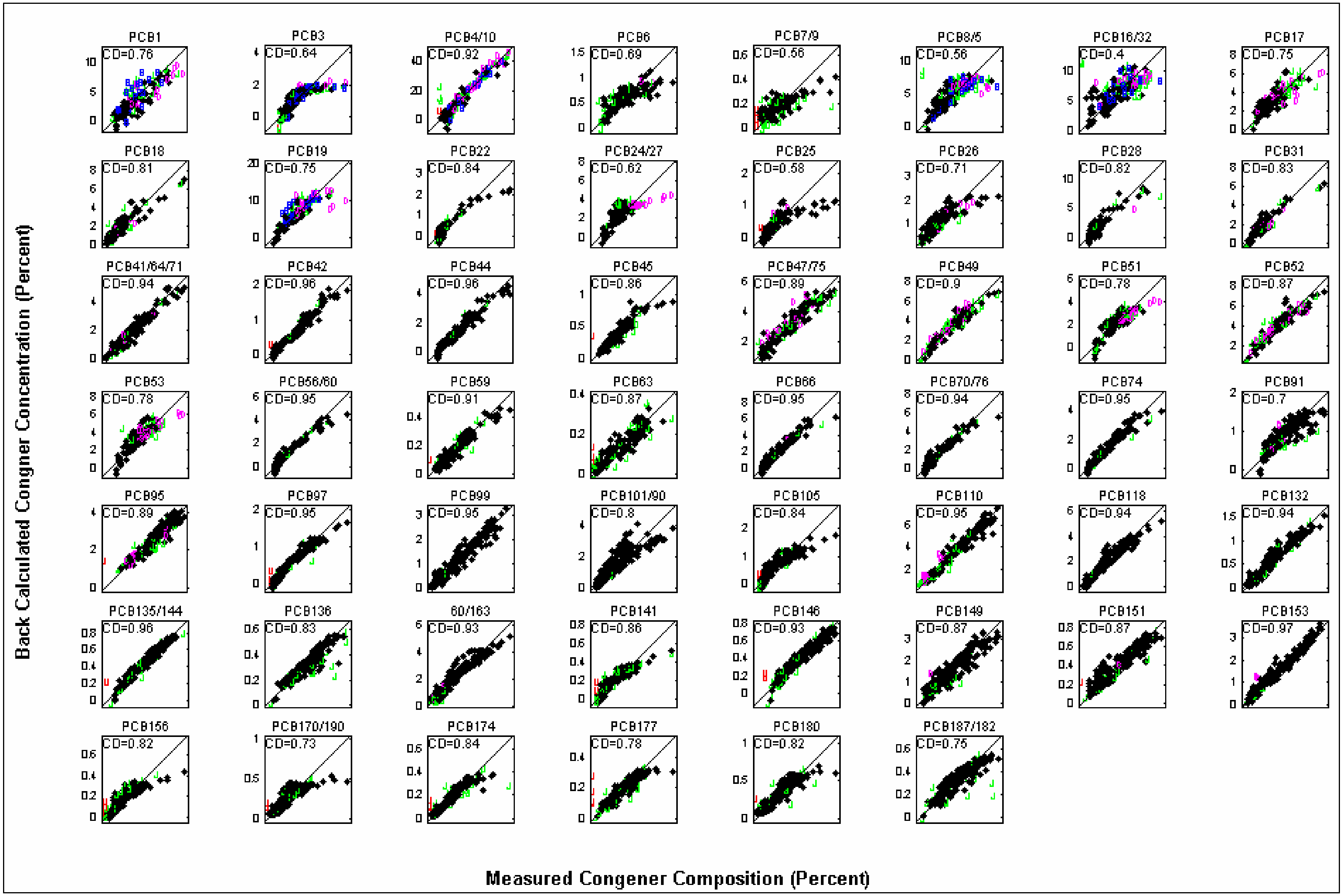

Figure 5-3. Miesch CD Scatter Plots for the Four End-Member Model

Table 5-4. Compositions for the Four End-Member Model

IUPAC	Structure	EM-1	EM-2	EM-3	EM-4
PCB 1	2-chlorobiphenyl	0.00	12.48	0.00	0.00
PCB 3	4-chlorobiphenyl	0.00	1.42	0.00	2.35
PCB 4/10	2,2′/2,6-dichlorobiphenyl	0.00	60.40	0.00	0.00
PCB 6	2,3′-dichlorobiphenyl	0.00	0.23	1.13	0.92
PCB 7/9	2,4/2,5-dichlorobiphenyl	0.00	0.00	0.46	0.28
PCB 8/5	2,4′/2,3-dichlorobiphenyl	0.00	4.23	5.49	8.09
PCB 16/32	2,2′,3/2,4′,6-trichlorobiphenyl	0.00	2.42	1.77	13.61
PCB 17	2,2′,4-trichlorobiphenyl	0.00	0.00	4.15	7.46
PCB 18	2,2′,5-trichlorobiphenyl	0.00	0.00	8.29	2.28
PCB 19	2,2′,6-trichlorobiphenyl	1.09	14.60	0.00	5.08
PCB 22	2,3,4′-trichlorobiphenyl	0.27	0.00	2.88	0.00
PCB 24/27	2,3,6/2,3′,6-trichlorobiphenyl	0.00	2.70	0.00	4.62
PCB 25	2,3′,4-trichlorobiphenyl	0.00	0.00	1.26	1.21
PCB 26	2,3′,5-trichlorobiphenyl	0.00	0.00	2.12	2.34
PCB 28	2,4,4′-trichlorobiphenyl	2.57	0.00	10.66	0.00
PCB 31	2,4′,5-trichlorobiphenyl	0.22	0.00	7.32	1.67
PCB 41/64/71	2,2′,3,4/2,3,4′,6/2,3′,4′,6-tetrachlorobiphenyl	3.54	0.00	5.89	0.74
PCB 42	2,2′,3,4′-tetrachlorobiphenyl	1.60	0.00	2.07	0.00
PCB 44	2,2′,3,5′-tetrachlorobiphenyl	3.56	0.00	5.29	0.00
PCB 45	2,2′,3,6-tetrachlorobiphenyl	0.70	0.00	0.99	0.00
PCB 47/75	2,2′,4,4′/2,4,4′,6-tetrachlorobiphenyl	2.94	0.00	0.00	6.83
PCB 49	2,2′,4,5′-tetrachlorobiphenyl	2.88	0.00	5.10	7.08
PCB 51	2,2′,4,6′-tetrachlorobiphenyl	0.15	1.03	0.00	5.02
PCB 52	2,2′,5,5′-tetrachlorobiphenyl	3.26	0.00	6.68	6.90
PCB 53	2,2′,5,6′-tetrachlorobiphenyl	0.00	0.45	0.00	7.88
PCB 56/60	2,3,3′,4′/2,3,4,4′-tetrachlorobiphenyl	3.18	0.00	5.19	0.00
PCB 59	2,3,3′,6-tetrachlorobiphenyl	0.38	0.00	0.50	0.00
PCB 63	2,3,4′,5-tetrachlorobiphenyl	0.42	0.00	0.16	0.00
PCB 66	2,3′,4,4′-tetrachlorobiphenyl	6.24	0.00	6.14	0.00
PCB 70/76	2,3′,4′,5/2′,3,4,5-tetrachlorobiphenyl	4.27	0.00	6.18	0.00
PCB 74	2,4,4′,5-tetrachlorobiphenyl	3.89	0.00	3.94	0.00
PCB 91	2,2′,3,4′,6-pentachlorobiphenyl	1.55	0.00	0.00	1.42
PCB 95	2,2′,3,5′,6-pentachlorobiphenyl	4.11	0.00	0.38	3.62
PCB 97	2,2′,3′,4,5-pentachlorobiphenyl	1.95	0.00	0.76	0.00
PCB 99	2,2′,4,4′,5-pentachlorobiphenyl	4.07	0.00	0.42	0.27
PCB 101/90	2,2′,4,5,5′/2,2′,3,4′,5-pentachlorobiphenyl	5.15	0.00	0.70	0.16
PCB 105	2,3,3′,4,4′-pentachlorobiphenyl	2.09	0.01	0.95	0.00
PCB 110	2,3,3′,4′,6-pentachlorobiphenyl	8.92	0.00	0.75	3.17
PCB 118	2,3′,4,4′,5-pentachlorobiphenyl	6.32	0.00	1.31	0.00
PCB 132	2,2′,3,3′,4,6′-hexachlorobiphenyl	1.90	0.00	0.18	0.06
PCB 135/144	2,2′,3,3′,5,6′/2,2′,3,4,5′,6-hexachlorobiphenyl	0.95	0.00	0.00	0.47
PCB 136	2,2′,3,3′,6,6′-hexachlorobiphenyl	0.66	0.04	0.00	0.38
PCB 138/160/163	2,2′,3,4,4′,5′/2,3,3′,4,5,6/2,3,3′,4′,5,6-hexachlorobiphenyl	6.45	0.00	0.30	0.91
PCB 141	2,2′,3,4,5,5′-hexachlorobiphenyl	0.64	0.00	0.19	0.00
PCB 146	2,2′,3,4′,5,5′-hexachlorobiphenyl	0.95	0.00	0.00	0.49
PCB 149	2,2′,3,4′,5′,6-hexachlorobiphenyl	4.22	0.00	0.00	1.63
PCB 151	2,2′,3,5,5′,6-hexachlorobiphenyl	0.89	0.00	0.00	0.51
PCB 153	2,2′,4,4′,5,5′-hexachlorobiphenyl	4.53	0.00	0.00	1.37
PCB 156	2,3,3′,4,4′,5-hexachlorobiphenyl	0.55	0.00	0.08	0.00
PCB 170/190	2,2′,3,3′,4,4′,5/2,3,3′,4,4′,5,6-heptachlorobiphenyl	0.65	0.00	0.08	0.13
PCB 174	2,2′,3,3′,4,5,6′-heptachlorobiphenyl	0.52	0.00	0.08	0.08
PCB 177	2,2′,3,3′,4′,5,6-heptachlorobiphenyl	0.38	0.00	0.00	0.25
PCB 180	2,2′,3,4,4′,5,5′-heptachlorobiphenyl	0.83	0.00	0.17	0.21
PCB 187/182	2,2′,3,4′,5,5′,6/2,2′,3,4,4′,5,6′-heptachlorobiphenyl	0.56	0.00	0.00	0.49

5.3.1 End-Member 1. The EM-1 composition is shown in Figure 5-4. This pattern is nearly identical to the EM-1 pattern resolved in the 2000 model, and is consistent with a mixture of Aroclors 1248 and 1254. Mixtures of these two Aroclors were evaluated iteratively until the best possible match was established with EM-1 based on cosine θ values. The cosine theta (Davis, 1986) calculates the cosine of the angle between two multivariate vectors. A cosine θ value of 0 would indicate two completely dissimilar, orthogonal vectors, and a cosine θ value of 1.0 would indicate two identical vectors. The highest cosine θ (0.94) was achieved when EM-1 was compared with a 40/60 mixture of Aroclors 1248 and 1254, respectively. The lower bar graph on Figure 5-4 illustrates the 40/60 Aroclor 1248/1254 mix for comparison with EM-1.

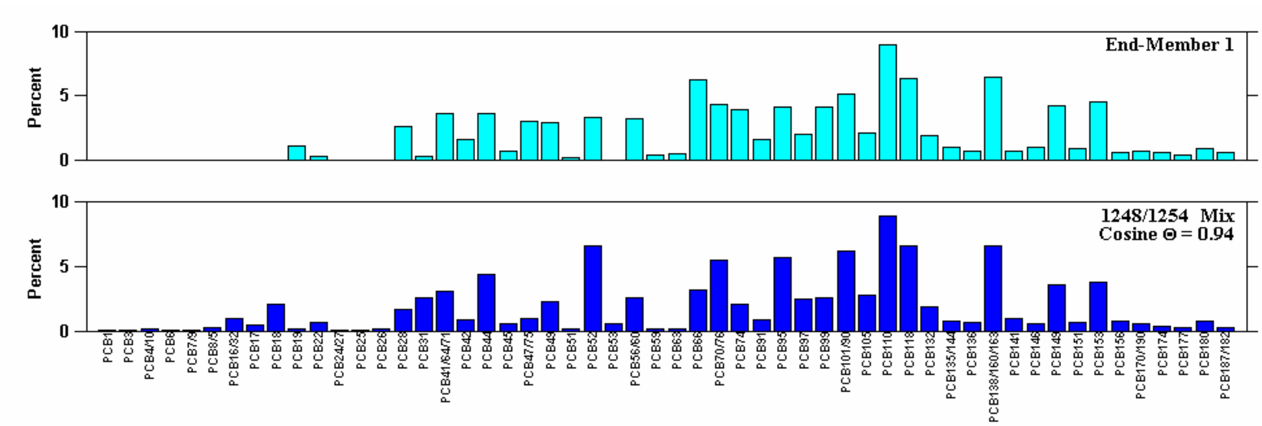

Figure 5-4. Comparison of End-Member 1 (Upper Bar Graph) to a 40/60 Mixture of Aroclors 1248/1254 (Lower Bar Graph). (EM-1 is consistent with a mixture of Aroclor 1254 and weathered Aroclors 1242 and/or 1016.)

As discussed in detail by Battelle (2001b; page 48), weathered (volatilized) Aroclor 1242 is consistent with unaltered Aroclor 1248 (Chiarenzelli et al., 1997). Given that Sangamo-Weston used Aroclor 1242 but not 1248, the source of 1248 in EM-1 is interpreted as weathered Aroclor 1242 that lost some lower-chlorinated congeners through volatilization or dissolution.

The compositions of Aroclors 1016 and 1242 also are relatively similar (Appendix F) in that both Aroclors are dominated by Cl-2, Cl-3 and Cl-4 homologues (Appendix G) and by similar congeners. This similarity suggests that the 1248 pattern also could be partly the result of weathered Aroclor 1016. Although Chiarenzelli and colleagues did not study Aroclor 1016 volatilization, Aroclors 1016 and 1242 are similar enough that they would likely weather similarly; separating their individual contributions to EM-1 was not possible using the existing data set.

Resolution of a source pattern with mixed characteristics of two sources indicates that the two were deposited on the lake floor in relatively constant proportions. This result suggests that (1) a single source of mixed Aroclors is present; or (2) two or more sources contribute to the pattern, but their relative contributions were homogenized prior to or during their deposition.

5.3.2 End-Member 2. EM-2 is analogous to the EM-2 pattern resolved in the 2000 model. The congeners that make up EM-2 preferentially exhibit chlorines in the 2, 2′, and 6 (*ortho*) positions. The dominant congeners are 2,2′/2,6-dichlorobiphenyl (PCB 4/10), 2-chlorobiphenyl (PCB 1), 2,2′,6-trichlorobiphenyl (PCB 19), and 2,2′,3/2,4′,6-trichlorobiphenyl (PCB 16/32) (Figure 5-5). This is consistent with *Process C* dechlorination as described by Bedard and Quensen (1995) and Quensen et al. (1990). Figure 5-5 compares EM-2 to two *Process C* dechlorination patterns. The middle bar graph shows the results of a 20-week dechlorination experiment using Aroclor 1248, and the bottom bar shows the results of a 4-week dechlorination experiment using Aroclor 1248 (Quensen et al., 1990). The inferred Aroclor 1242/1254 source in the study area and the dominance of orthochlorines in EM-2 suggest that EM-2 is result of a microbial dechlorination. The similarity of EM-2 with *Process C* results reported by Quensen (1995) and Quensen et al. (1990) suggest that the dechlorination pattern was similar to *Process C.*

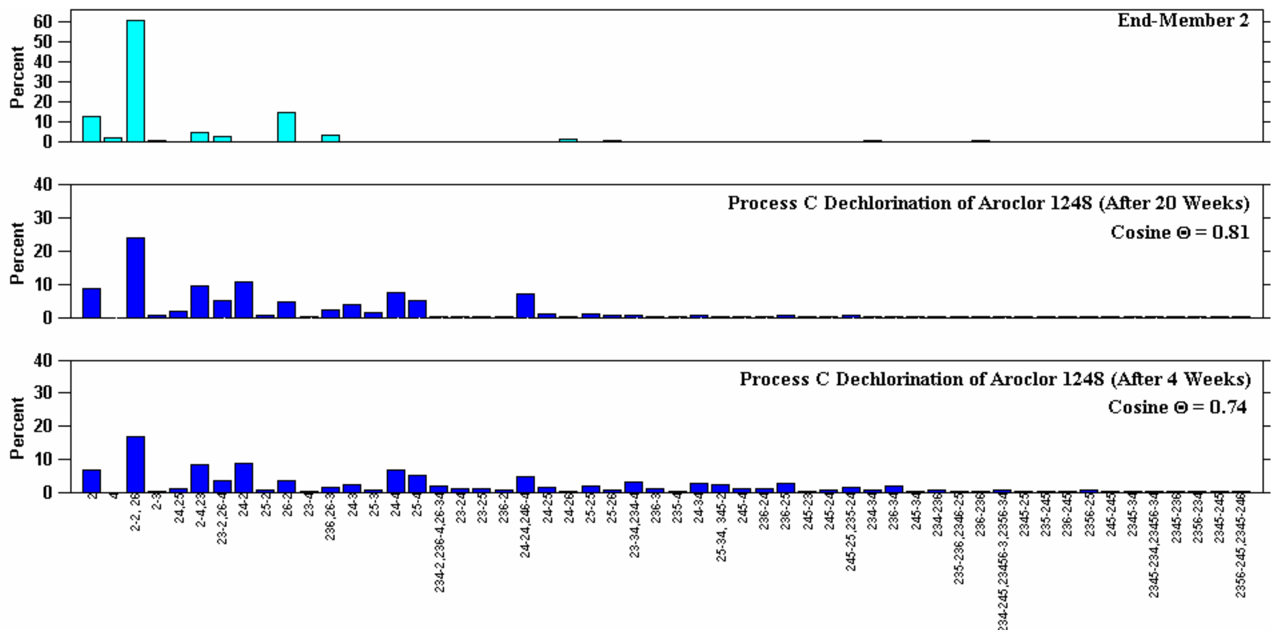

Figure 5-5. Comparison of End-Member 2 (Upper Bar Graph) to Quensen et al. (1990) *Process C* Dechlorination of Aroclor 1248 after 20 Weeks Incubation (Middle Bar Graph) and 4 Weeks Incubation (Lower Bar Graph)

Bedard and Quensen (1995) review a variety of dechlorination processes reported in the literature; these processes have been identified as *Process M*, *Process Q*, *Processes H* and *H′*, *Process P*, *Process N*, and *Process C*. Quensen et al. (1990) also demonstrated that *Process C* could operate on Aroclors 1248 (as shown on Figure 5-5) and Aroclors 1254 and Aroclor 1242 (not shown). The cosine θ between these EM-2 and the 20-week dechlorination pattern was 0.81, suggesting that the patterns are similar. EM-2 showed higher proportions of lower-chlorinated congeners and fewer tri- and tetrachlorobiphenyls than did the 20-week dechlorinated sample. This result may be due to the much longer incubation observed with the Lake Hartwell sediments (0 to 20 years), which would be expected to result in more extensive dechlorination of the tri- and tetrachlorobiphenyl congeners.

5.3.3 End-Member 3. EM-3 is a new pattern that was resolved using the combined 2000 and 2001 data. EM-3 is very similar to Aroclor 1242 (cos θ = 0.92; Figure 5-6). The high proportions of PCB8/5, PCB16/32, PCB17, and PCB18 in EM-3 make this pattern more consistent with Aroclor 1242 than with Aroclor 1248. However, the principal difference between EM-3 and Aroclor 1242 is that EM-3 does not exhibit several low-chlorinated congeners characteristic of 1242: namely, PCB1, PCB3 and PCB10. Thus, EM-3 is consistent with an Aroclor 1242 pattern that has been slightly weathered. Figure 5-6 shows the residual congener composition resulting from an Aroclor 1242 volatilization experiment reported by Chiarenzelli et al. (1997). EM-3 also is relatively well correlated to the weathered Aroclor 1242 pattern (cos θ = 0.84; Figure 5-6).

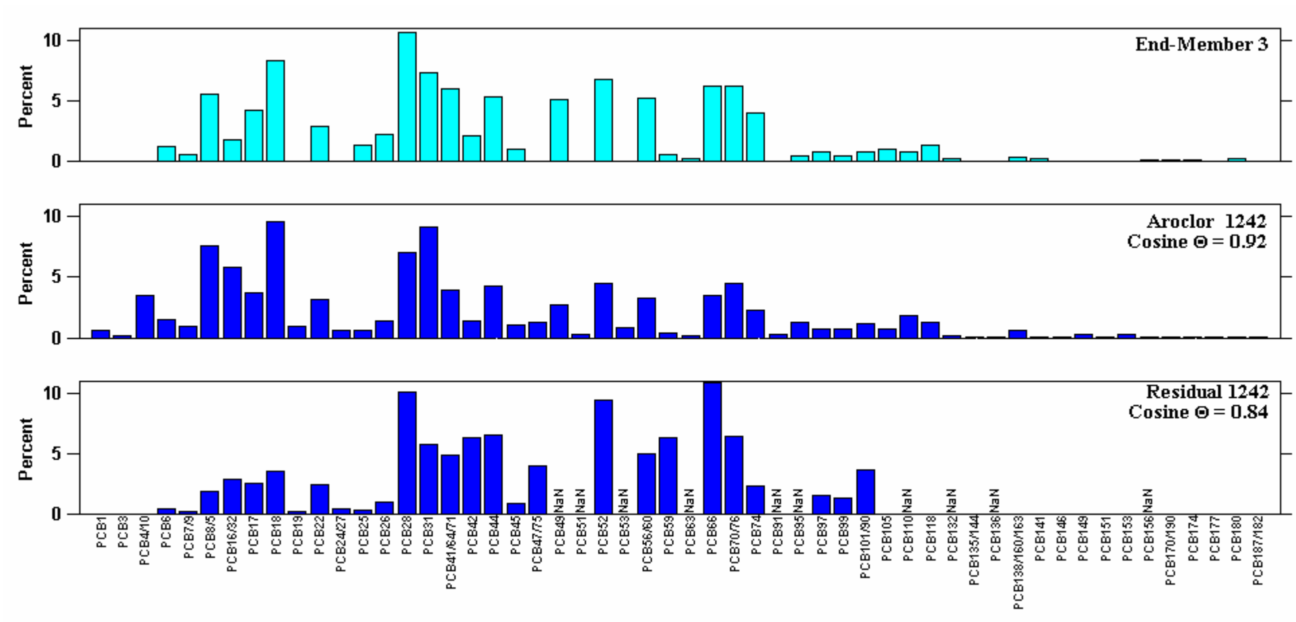

Figure 5-6. Comparison of End-Member 3 to Aroclor 1242 and Residual Aroclor 1242 (the Residual Congener Composition in Sediments after a 24-hour Aroclor 1242 Volatilization Experiment; Chiarenzelli et al., 1997). ("NaN" on residual bar graph indicates that Chiarenzelli et al. did not quantify the corresponding congener.)

5.3.4 End-Member 4. EM-4 is characterized by dichloro-, trichloro-, and tetrachlorobiphenyls (Figure 5-7; middle graph). Review of known dechlorination processes suggest that this pattern is related to *Process H′* dechlorination (Bedard and Quensen, 1995; Alder et al., 1993; Rhee et al., 1993). *Process H′* involves dechlorination of 2,3-, 2,3,4, and possibly 2,3,6-chlorobiphenyl groups from the *meta* (3 and 5) positions, and 3,4- and 2,4,5-chlorobiphenyls from the *para* (4) position.

Unlike *Process C*, no available reference data exists for *Process H′* dechlorination experiments. However, Figure 5-7 shows an inferred dechlorination pattern using EM-1 as the source (top graph: 40/60 Aroclor 1248/1254 mixture), and EM-4 as the alteration product (middle graph). The congeners that were lost in the process (i.e., those that show a negative difference on the bottom graph of Figure 5-7) all have chlorine groups that Bedard and Quensen (1995) reported were susceptible to *Process H′* dechlorination (i.e., PCB congeners with 2,3-, 3,4-, 2,3,4-, 2,4,5-, 2,3,6-, 2,3,4,5-, 2,3,4,6-, and 2,3,4,5,6-chlorobiphenyl groups). Congeners that they report as characteristic dechlorination end products under *Process H′* (2,3′-, 2,4′-, 2,2′,4-, 2,2′,5-, 2,4′,5-, 2,2′, 4,5′-, and 2,2′,5,5′-polychlorobiphenyls) generally exhibited positive differences in Figure 5-7. There were some exceptions; for example, 2,4,4′-trichlorobiphenyl is a predicted *Process H′* dechlorination product but showed a negative difference on Figure 5-7, indicating loss, not accumulation). However, for most congeners, EM-4 was consistent with *Process H′* dechlorination.

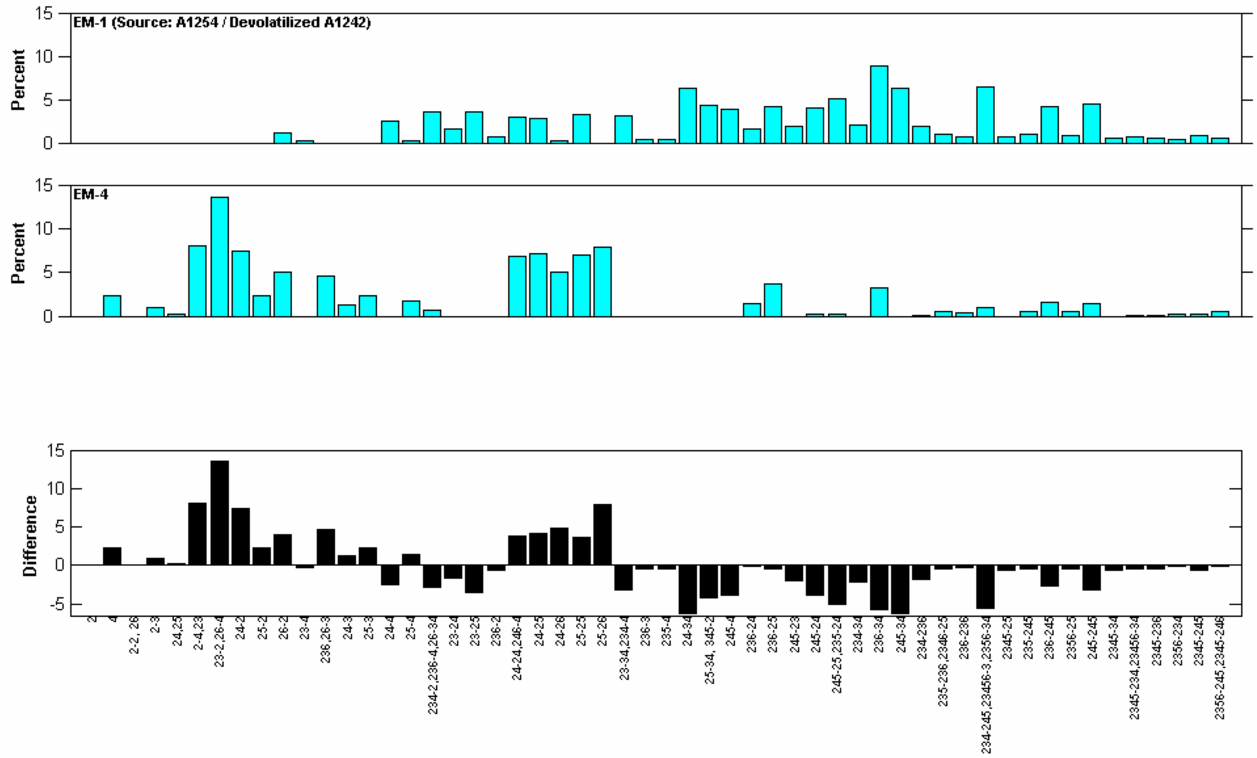

Figure 5-7. Comparison of End-Member-4 (Middle Bar Graph) and End-Member-1 (Upper Bar Graph). (The bottom graph shows the difference between the EM-1 and EM-4 congener patterns. EM-1 is consistent with a 40/60 mixture of Aroclor 1248 (weathered Aroclors 1242 and/or 1016) and Aroclor 1254. Congeners showing a net loss have chlorine groups consistent with expected *Process H'* dechlorination, including 2,3-, 3,4-, 2,3,4-, 2,3,6-, 2,4,5-, 2,3,4,5-, and 2,3,4,5,6-chlorobiphenyl groups, suggesting that EM-4 is consistent with *Process H'* (Bedard and Quensen, 1995; Rhee et al., 1993; and Alder et al., 1993. Congeners that showed an accumulation are consistent with *Process H'* dechlorination products.)

5.4 End-Member Distributions in Surface Sediments Vertical Sediment Profiles

This section describes the vertical distributions of EM-1 through EM-4 in the sediment cores collected in 2000 and 2001, and EM surface sediment distributions in sediments distributed across Lake Hartwell and Twelvemile Creek. EM mixing proportions in each resolved sample are shown in Table 5-5 by sediment core, and are discussed for each EM in Sections 5.4.1 through 5.4.4.

5.4.1 End-Member 1 Distributions (Slightly Weathered 1254/1242/1016). Figures 5-8 and 5-9 show the percent distributions of EM-1 in the sediment cores. EM-1 was observed in high proportions primarily in surface sediment samples, with decreasing proportion with sediment depth and corresponding age. This is consistent with the geographic and temporal distributions of this pattern described by Battelle (2001b) for cores collected during the 2000 sampling event. This further corroborates the hypothesis that EM-1 is characteristic of the PCB source from Sangamo-Weston.

The distribution of EM-1 in surface sediments of Twelvemile Creek and Lake Hartwell are shown in bubble maps in Figures 5-10 and 5-11, respectively. The percent distribution of EM-1 in the surface sediments is represented by the size of the bubbles on the maps as % t-PCB present in the EM-1 mode.

A relatively high EM-1 contribution (50%-80% t-PCB) was observed in surface sediments throughout Lake Hartwell and Twelvemile Creek, except for three sample locations where EM-1 contributed approximately 1%-35% of the t-PCB in the surface sediments, including the C-1 location, one of the three C-6 samples, and one of the four surface Transect L core samples. The C-1 and C-6 locations were dominated by EM-4 (see Section 5.4.4), another source pattern, explaining the presence of a relatively low proportion of EM-1.

5.4.2 End-Member 2 Distributions (*Process C* Dechlorination). Figures 5-12 and 5-13 illustrate the percent distributions of EM-2 in the sediment cores. EM-2 was encountered in increasing proportions with sediment depth in all cores except Core J. The maximum proportions of EM-2 roughly correspond to sediment intervals of highest total PCB concentration, which correspond to the end of the 1970s to early 1980s. This may suggest that *Process C* was favored in Lake Hartwell sediments due to unique microbial communities at depths corresponding to c. 1975-1985, and high PCB concentrations in the sediments. Alternatively, PCB dechlorination may have been favored in sediments with relatively high PCB concentrations; that is, higher PCB concentrations may have resulted in higher dechlorination rates. In general, EM-2 also increased proportionately with sediment depth and age. This would be expected as dechlorination is a slow, strictly anaerobic process that typically occurs in buried sediments. The highest EM-2 proportions were seen in the Transect L cores (L, T-L-A, T-L-B, and T-L-C) and the Transect I cores (I, T-I-A, and T-I-B), where EM-2 approached 75% of the PCBs in the deeper and older sediments.

The distribution of EM-2 in the surface sediments of Twelvemile Creek and Lake Hartwell are shown in bubble maps in Figures 5-14 and 5-15, respectively. The percent contribution of EM-2 in each surface sediment sample is represented by the size of the bubbles on the maps. The scale at the bottom-right of each map shows a 10%, 50%, or 100% sized bubble, for reference. The proportion of EM-2 in the surface sediments was much lower than for EM-1, generally less than 10%. Thus, EM-2 was not a major contributor in surface sediments. Three notable exceptions were core sample P-1 (0-10 cm: 57% EM-2), surface sediment sample S2 C6-C1 (44% EM-2), and core sample T-L-A-1 (0 to 5 cm: 35% EM-2). These results support the hypothesis that EM-2 represents a congener pattern resulting from PCB dechlorination, and as such is found in the deeper sediments at the site and not in surface sediments.

5.4.3 End-Member 3 Distributions (Slightly Weathered Aroclor 1242). Figures 5-16 and 5-17 present the percent distributions of EM-3 in the sediment cores. Figures 5-18 and 5-19 show EM-3 distributions in surface sediments. EM-3 was observed in highest proportions in three surface sediment samples from location C-1 (S2C-1A, S1C-1A, and S1C-1B had >80% EM-3). This result is consistent with the following information: (1) C-1 was the sampling station closest to Sangamo-Weston (within 1 mile); (2) U.S. EPA (1994) reported that Sangamo-Weston used Aroclors 1242 and 1016; and (3) one would expect the least-altered 1242 pattern to be found nearest its source. EM-3 was the only new pattern resolved as a result of sampling in 2001; samples from 2000 did not include sampling stations this close to Sangamo-Weston. The proportion of EM-3 in the lake sediments (e.g., in Transects T-16 through T-6) was very low (generally less than 10%), further supporting the interpretation of the EM as a source pattern.

5.4.4 End-Member 4 Distributions (*Process H'* Dechlorination). Figures 5-20 and 5-21 show the percent distributions of EM-4 in the sediment cores. EM-4 was observed in high proportions in samples from all cores, and was relatively consistently observed throughout the surface sediments in Lake Hartwell (Figures 5-22 and 5-23). As an intermediate dechlorination congener pattern, it was not surprising to find EM-4 distributed throughout the sediment cores. These results suggest that most or all the sediments have undergone varying degrees of dechlorination historically.

Table 5-5. End-Member Distributions in Sediment Core Samples

Sample	EM-1	EM-2	EM-3	EM-4	Sample	EM-1	EM-2	EM-3	EM-4
T16-2	21%	35%	15%	29%	**T-O-A-1**	55%	13%	7%	25%
T16-6	11%	63%	1%	25%	**T-O-A-2**	50%	17%	9%	23%
T16-7	-1%	67%	4%	29%	**T-O-A-3**	55%	11%	13%	21%
T16-8	2%	36%	11%	51%	**T-O-A-4**	59%	11%	10%	20%
T16-9	9%	51%	5%	35%	**T-O-A-5**	56%	6%	11%	26%
T16-10	4%	64%	9%	23%	**T-O-A-6**	55%	5%	-3%	43%
W7-1	57%	11%	16%	16%	**T-O-A-7**	28%	14%	0%	58%
W7-2	52%	16%	11%	21%	**T-O-A-8**	19%	27%	8%	47%
W7-6	-2%	33%	14%	55%	**T-O-A-9**	45%	10%	-2%	47%
W7-7	18%	22%	14%	45%	**T-O-A-10**	18%	22%	6%	54%
W7-11	-1%	50%	14%	37%	**T-O-A-11**	-2%	39%	10%	53%
Q-1	70%	5%	-6%	31%	**T-O-A-13**	49%	7%	-5%	49%
Q-2	59%	12%	13%	16%	**T-O-A-14**	6%	37%	7%	51%
Q-4	38%	20%	20%	22%	**T-O-A-15**	3%	37%	11%	50%
Q-5	41%	26%	5%	28%	**T-O-A-16**	0%	34%	14%	52%
Q-6	23%	34%	7%	36%	**T-O-A-17**	13%	23%	49%	15%
Q-7	26%	24%	-2%	52%	**T-O-A-18**	32%	4%	69%	-5%
Q-9	16%	27%	5%	53%	**T-O-A-19**	42%	-2%	72%	-12%
Q-10	7%	73%	-1%	21%	**T-O-A-20**	63%	4%	6%	28%
P-1	14%	57%	8%	21%	**T-O-B-1**	46%	15%	6%	34%
P-2	50%	18%	14%	18%	**T-O-B-2**	43%	20%	13%	24%
P-3	52%	13%	13%	21%	**T-O-B-3**	48%	21%	10%	20%
P-4	33%	26%	15%	26%	**T-O-B-4**	34%	24%	14%	28%
P-5	32%	30%	-1%	40%	**T-O-B-5**	28%	29%	17%	25%
P-6	36%	22%	-4%	47%	**T-O-B-6**	38%	21%	15%	25%
P-7	20%	26%	5%	48%	**T-O-B-7**	49%	16%	14%	22%
P-8	2%	80%	-4%	22%	**T-O-B-8**	55%	12%	11%	22%
P-9	3%	77%	-4%	23%	**T-O-B-9**	55%	11%	16%	17%
O-1	63%	6%	7%	23%	**T-O-B-10**	12%	38%	10%	39%
O-2	62%	6%	8%	24%	**T-O-B-11**	3%	50%	15%	32%
O-3	54%	8%	3%	35%	**T-O-B-13**	1%	56%	11%	32%
O-4	35%	16%	-1%	50%	**T-O-B-15**	4%	20%	9%	66%
O-5	23%	19%	2%	56%	**T-O-C-1**	50%	14%	11%	25%
O-6	21%	18%	4%	57%	**T-O-C-2**	45%	16%	13%	26%
O-7	5%	33%	8%	55%	**T-O-C-3**	41%	21%	15%	24%
O-8	-1%	56%	7%	39%	**T-O-C-4**	48%	15%	16%	21%
O-9	4%	44%	10%	41%	**T-O-C-5**	54%	11%	15%	20%
N-1	68%	4%	10%	18%	**T-O-C-6**	59%	8%	12%	20%
N-2	65%	5%	11%	18%	**T-O-C-7**	49%	13%	16%	22%
N-3	63%	5%	7%	25%	**T-O-C-8**	37%	24%	15%	23%
N-4	56%	7%	1%	35%	**T-O-C-9**	48%	15%	19%	19%
N-5	31%	18%	-1%	52%	**T-O-C-10**	45%	13%	18%	24%
N-6	25%	14%	1%	60%	**T-O-C-11**	42%	17%	13%	28%
N-7	7%	39%	7%	47%	**T-O-C-12**	16%	25%	13%	46%
N-8	1%	63%	9%	27%	**T-O-C-13**	17%	25%	4%	54%
N-9	-2%	58%	10%	34%	**T-O-C-14**	27%	13%	2%	59%
					T-O-C-15	22%	11%	4%	64%
					T-O-C-16	25%	12%	4%	60%
T-O-C-19	-1%	43%	10%	48%	**T-O-C-17**	11%	23%	7%	59%
T-O-C-20	8%	24%	14%	54%	**T-O-C-18**	11%	30%	6%	52%

Table 5-5. End-Member Distributions in Sediment Core Samples (cont'd)

Sample	EM-1	EM-2	EM-3	EM-4
T-L-A-1	36%	35%	2%	27%
T-L-A-2	58%	10%	4%	28%
T-L-A-3	54%	9%	5%	32%
T-L-A-4	51%	8%	-6%	47%
T-L-A-5	30%	19%	-2%	53%
T-L-A-6	14%	38%	3%	45%
T-L-A-7	4%	73%	-3%	26%
T-L-A-8	8%	77%	-4%	18%
T-L-A-9	-1%	64%	16%	21%
T-L-A-10	9%	66%	4%	21%
T-L-B-1	62%	7%	7%	24%
T-L-B-2	64%	7%	6%	23%
T-L-B-3	64%	6%	2%	28%
T-L-B-4	56%	7%	-3%	39%
T-L-B-5	42%	13%	-5%	50%
T-L-B-6	32%	10%	-6%	64%
T-L-B-7	19%	13%	-1%	68%
T-L-B-8	7%	17%	8%	68%
T-L-B-9	-6%	37%	13%	56%
T-L-B-10	-2%	50%	6%	46%
T-L-B-11	1%	53%	4%	43%
T-L-B-12	5%	32%	4%	60%
T-L-B-13	-3%	43%	8%	52%
T-L-B-14	-4%	40%	9%	55%
T-L-B-15	4%	21%	6%	68%
T-L-B-16	8%	19%	7%	66%
T-L-B-17	31%	19%	5%	46%
T-L-B-18	42%	-10%	18%	50%
T-L-B-19	33%	-11%	15%	63%
T-L-B-20	16%	-12%	24%	73%

Sample	EM-1	EM-2	EM-3	EM-4
L-1	67%	3%	6%	25%
L-2	63%	5%	5%	27%
L-3	47%	8%	-4%	49%
L-4	34%	10%	-5%	62%
L-5	18%	14%	1%	68%
L-6	2%	25%	10%	63%
L-7	-2%	57%	5%	39%
L-8	-4%	56%	6%	41%
L-9	-5%	50%	9%	46%
L-10	-5%	49%	9%	47%
L-11	-6%	45%	10%	51%
L-12	16%	29%	9%	46%
L-13	16%	5%	17%	62%
L-14	1%	9%	19%	71%
L-15	-2%	27%	10%	65%
L-16	5%	56%	6%	33%
T-L-C-1	67%	11%	0%	22%
T-L-C-2	54%	10%	7%	29%
T-L-C-3	45%	11%	-5%	49%
T-L-C-4	12%	26%	4%	59%
T-L-C-5	3%	55%	1%	41%
T-L-C-6	0%	55%	5%	40%
T-L-C-7	1%	59%	7%	34%
T-L-C-9	-3%	48%	9%	47%
T-L-C-10	-3%	43%	11%	50%
T-L-C-11	24%	13%	15%	48%
T-L-C-12	13%	-1%	21%	68%
T-L-C-13	5%	20%	9%	66%
T-L-C-14	7%	41%	-1%	53%
T-L-C-15	1%	57%	-7%	49%
T-L-C-16	1%	73%	-4%	30%
T-L-C-17	9%	70%	-7%	28%
T-L-C-18	7%	51%	20%	22%
T-L-C-19	13%	31%	25%	31%
T-L-C-20	8%	39%	32%	20%

Table 5-5. End-Member Distributions in Sediment Core Samples (cont'd)

Sample	EM-1	EM-2	EM-3	EM-4	Sample	EM-1	EM-2	EM-3	EM-4
J-1	66%	3%	7%	25%	**T-I-B-1**	56%	5%	-11%	50%
J-2	66%	2%	6%	26%	**T-I-B-2**	11%	34%	7%	48%
J-3	67%	2%	6%	25%	**T-I-B-3**	7%	45%	1%	47%
J-4	67%	2%	6%	25%	**T-I-B-4**	15%	55%	-11%	41%
J-5	65%	2%	3%	30%	**T-I-B-5**	6%	59%	7%	27%
I-1	66%	1%	4%	29%	**T-I-B-6**	19%	10%	56%	14%
I-2	66%	-2%	-3%	39%	**T-I-B-7**	37%	6%	52%	4%
I-3	53%	0%	-9%	56%	**T6-1**	63%	-3%	-3%	43%
I-4	42%	1%	-8%	66%	**T6-2**	44%	2%	-3%	57%
I-5	28%	6%	-2%	68%	**T6-3**	7%	13%	12%	68%
I-6	24%	8%	7%	61%	**T6-4**	1%	49%	1%	49%
I-7	12%	-4%	18%	74%	**T6-5**	7%	48%	6%	39%
I-8	6%	7%	12%	75%	**S1 C-1A**	5%	5%	82%	9%
I-9	3%	30%	4%	63%	**S1 C-1B**	-1%	5%	86%	10%
I-10	-3%	54%	-1%	50%	**S1 C-3A**	74%	3%	20%	3%
I-11	-2%	61%	-3%	43%	**S1 C-5A**	81%	7%	11%	1%
T-I-A-1	59%	11%	-5%	35%	**S1 C-5B**	70%	4%	25%	1%
T-I-A-2	35%	26%	-7%	46%	**S1 C-6B**	49%	8%	38%	6%
T-I-A-3	10%	38%	-2%	53%	**S2 C1A**	2%	8%	81%	9%
T-I-A-4	12%	62%	-6%	33%	**S2 C1B**	35%	5%	60%	0%
T-I-A-5	7%	62%	6%	25%	**S2 C6-C1**	25%	44%	18%	13%
T-I-A-6	20%	23%	48%	8%	**S2 C6-D1**	70%	7%	-1%	24%
T-I-A-7	24%	0%	68%	7%					
T-I-A-8	30%	1%	65%	4%					
T-I-A-9	42%	11%	33%	13%					
T-I-A-10	10%	48%	16%	25%					

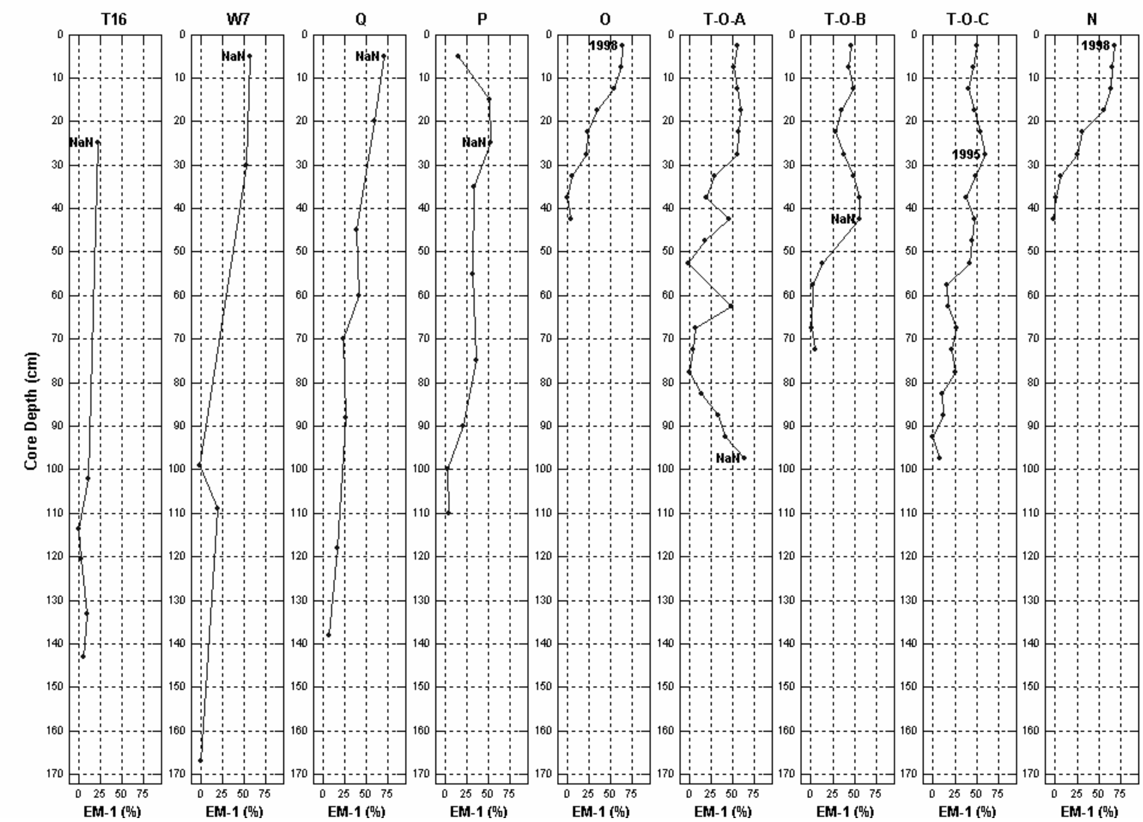

Figure 5-8. Vertical EM-1 Distributions in the Nine Northern-Most Lake Hartwell Cores, Including Cores T16, W7, Q, P, O, T-O-A, T-O-B, T-O-C, and N. (The T16, W7, Q, P, and all four O cores were noticeably impacted by sand released from the upgradient impoundments. Cores T16, W7, Q, P, O, and N were collected in 2000, and Cores T-O-A, T-O-B, and T-O-C were collected in 2001. "NaN" on residual bar graph indicates that Chiarenzelli et al. (1997) did not quantify the corresponding congener.)

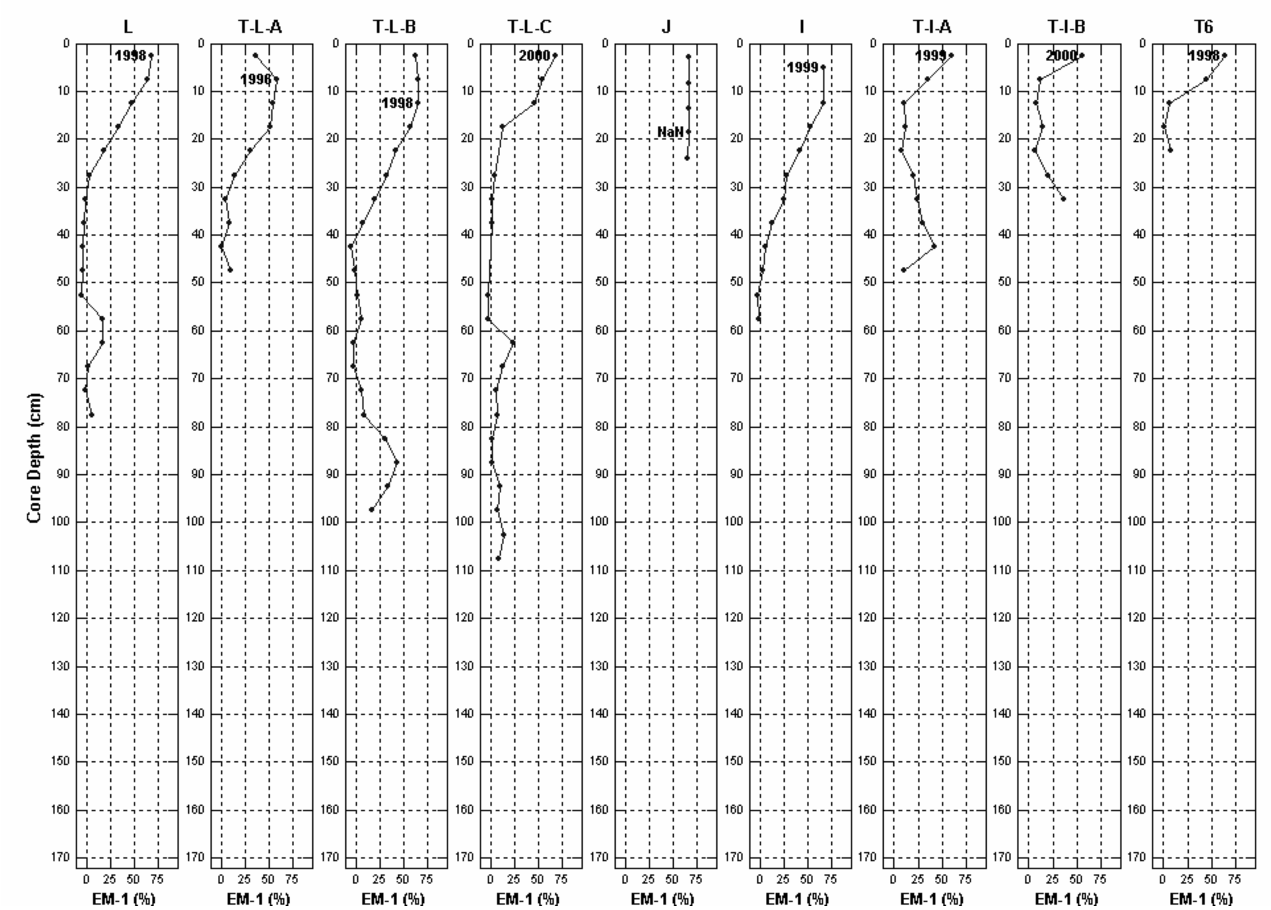

Figure 5-9. Vertical EM-1 Distributions in the Nine Southern-Most Lake Hartwell Cores, Including Cores L, T-L-A, T-L-B, T-L-C, J, I, T-I-A, T-I-B, and T6. (Cores L, J, I, and T6 were collected in 2000, and Cores T-L-A, T-L-B, T-L-C, T-I-A, and T-I-B were collected in 2001. "NaN" on residual bar graph indicates that Chiarenzelli et al. (1997) did not quantify the corresponding congener.)

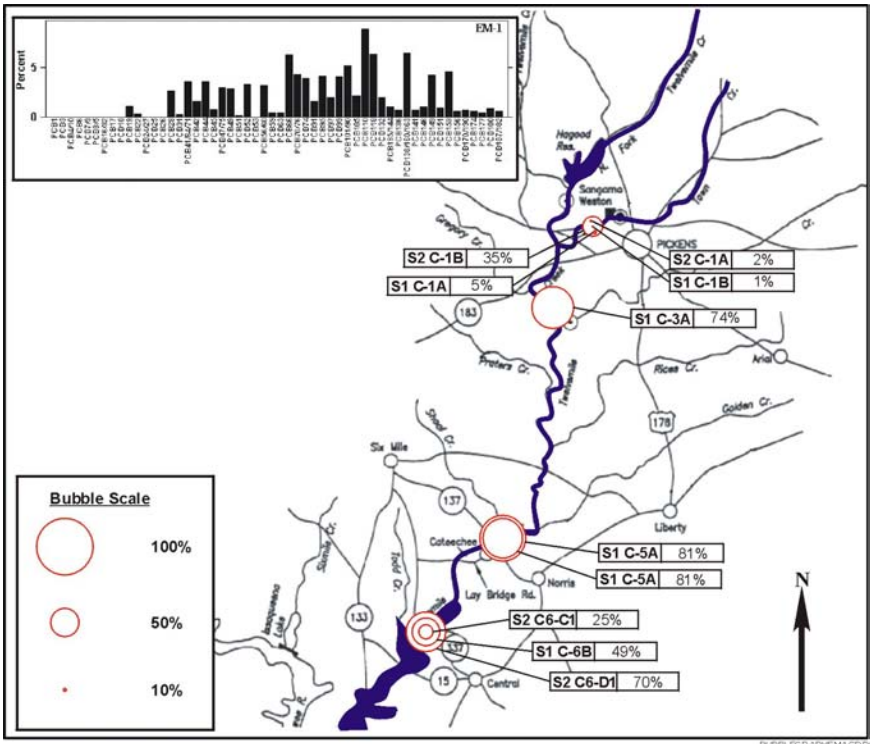

Figure 5-10. Bubble Map of EM-1 Distributions in Surface Sediment Samples from Twelvemile Creek, Upstream of Lake Hartwell. (Multiple bubbles at a single location represent replicate field samples.)

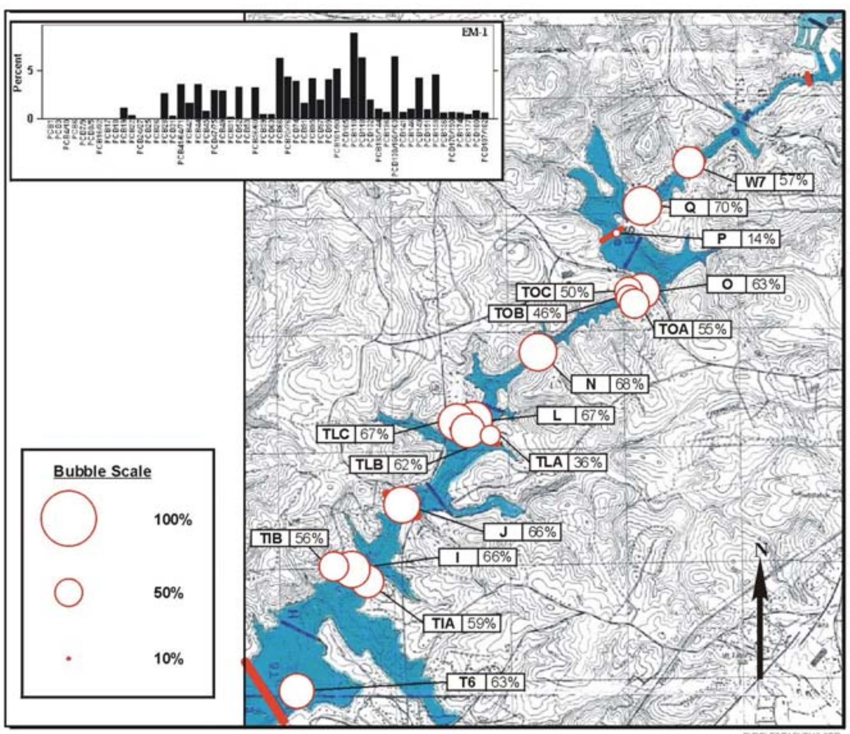

Figure 5-11. Bubble Map of EM-1 Distributions in Surface Sediment Samples from Lake Hartwell Sediment Cores. (Multiple bubbles at a single transect represent surface samples from multiple cores at that transect location.)

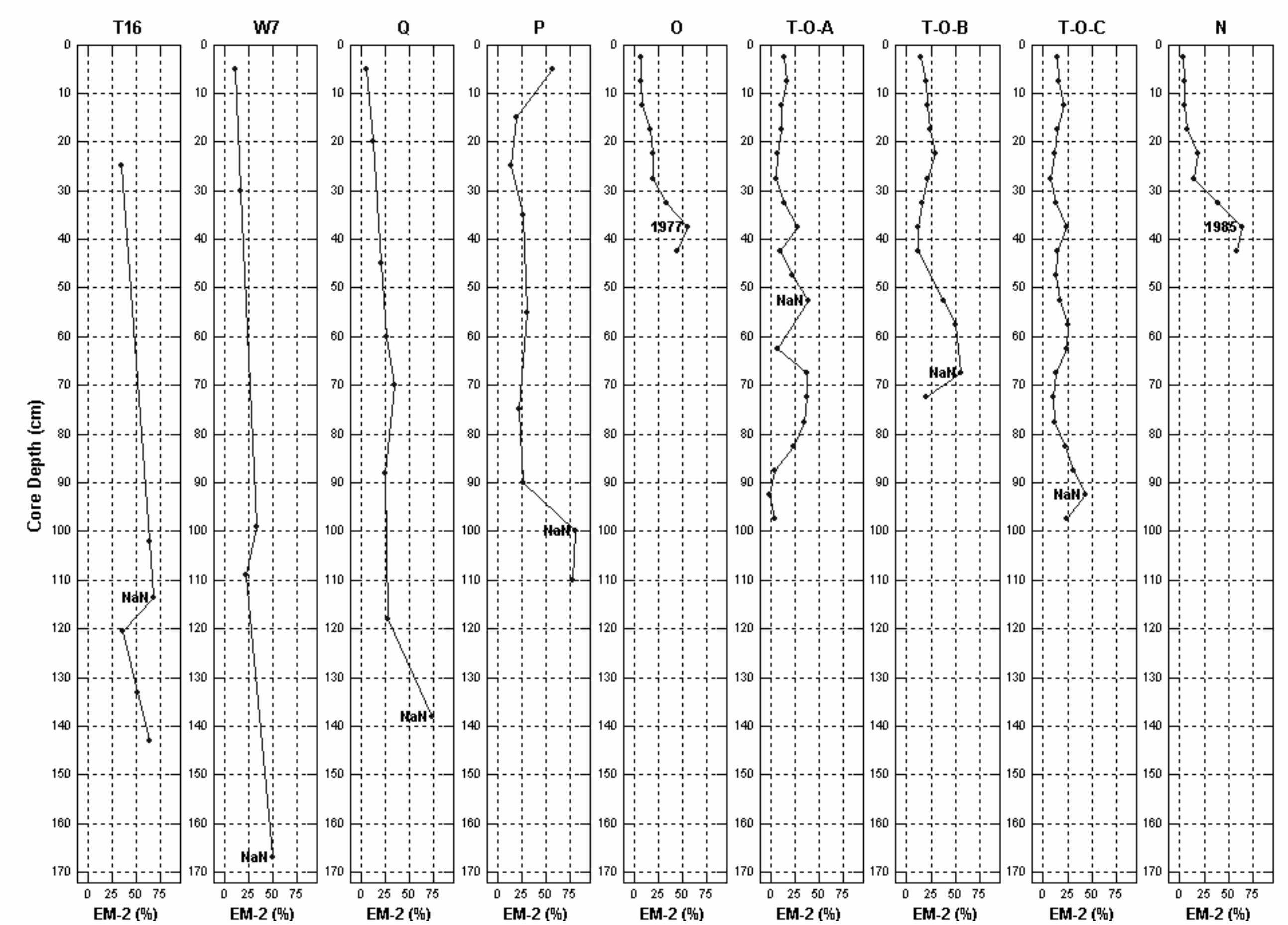

Figure 5-12. Vertical EM-2 Distributions in the Nine Northern-Most Lake Hartwell Cores, Including Cores T16, W7, Q, P, O, T-O-A, T-O-B, T-O-C, and N. (The T16, W7, Q, P, and all four O cores were noticeably impacted by sand released from the upgradient impoundments. Cores T16, W7, Q, P, O, and N were collected in 2000 and Cores T-O-A, T-O-B, and T-O-C were collected in 2001. "NaN" on residual bar graph indicates that Chiarenzelli et al. (1997) did not quantify the corresponding congener.)

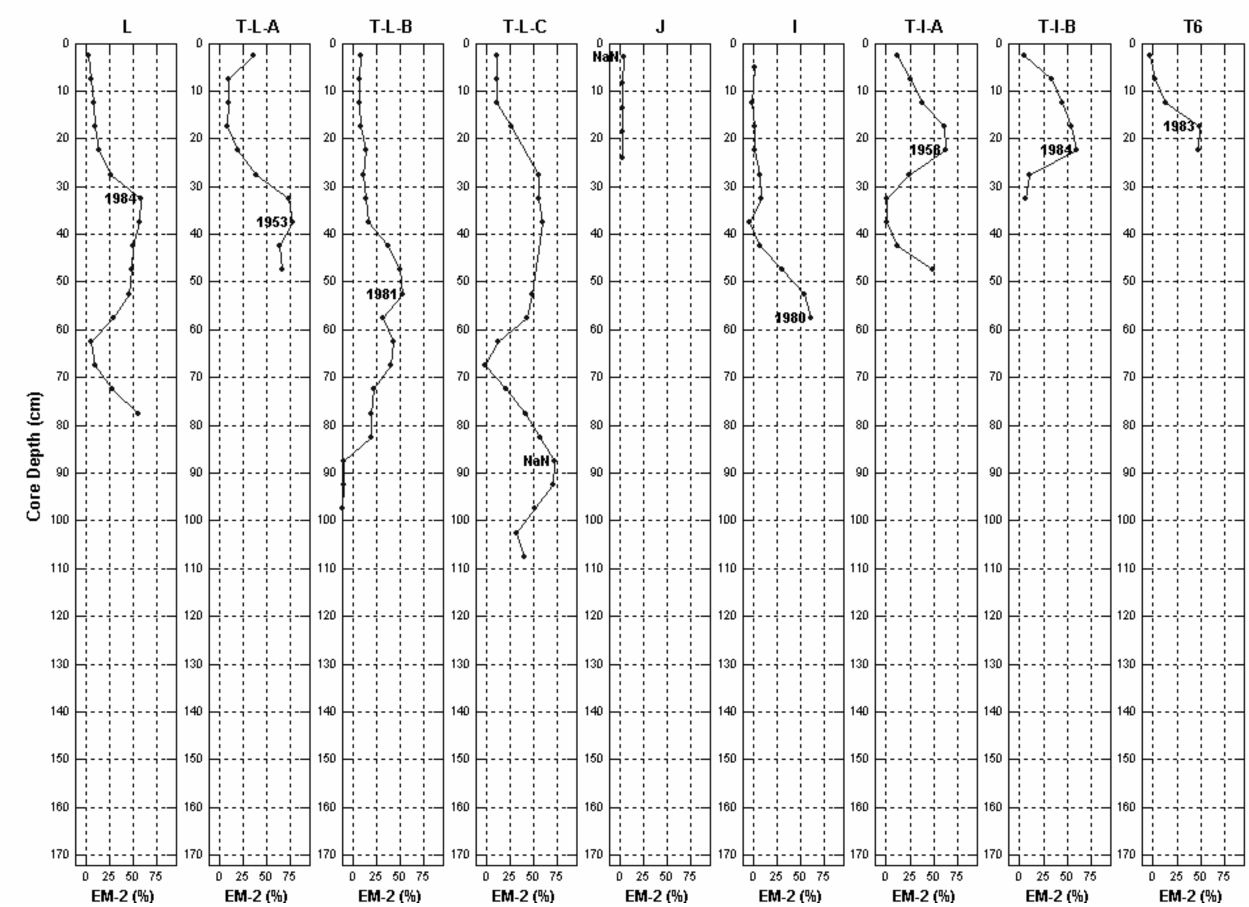

Figure 5-13. Vertical EM-2 Distributions in the Nine Southern-Most Lake Hartwell Cores, Including Cores L, T-L-A, T-L-B, T-L-C, J, I, T-I-A, T-I-B, and T6. (Cores L, J, I, and T6 were collected in 2000, and Cores T-L-A, T-L-B, T-L-C, T-I-A, and T-I-B were collected in 2001. "NaN" on residual bar graph indicates that Chiarenzelli et al. (1997) did not quantify the corresponding congener.)

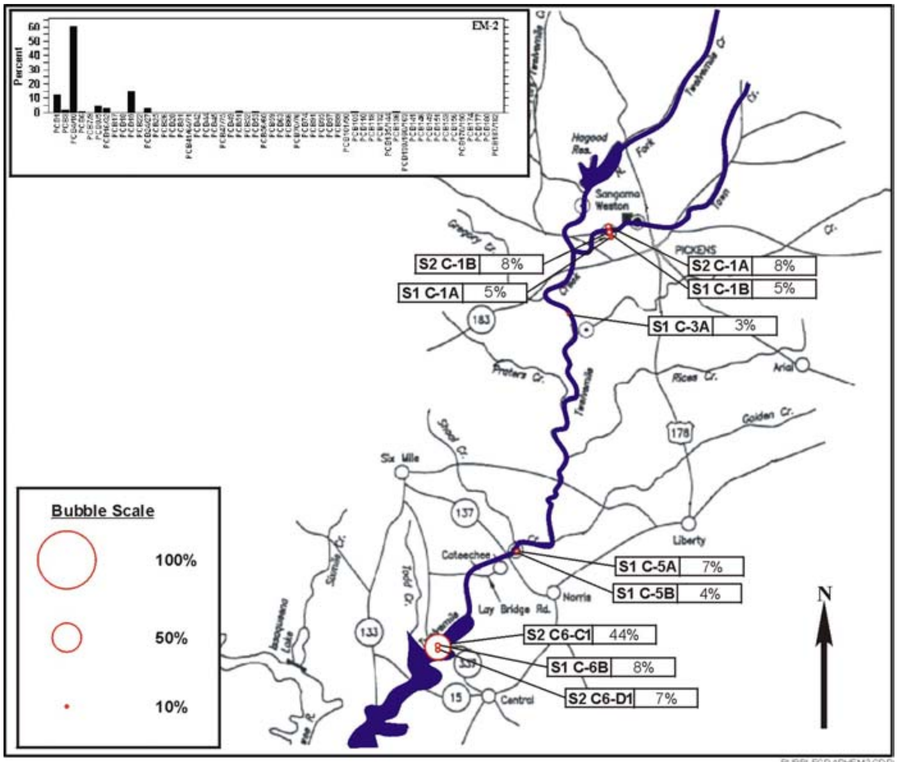

Figure 5-14. Bubble map of EM-2 Distributions in Surface Sediment Samples from Twelvemile Creek, Upstream of Lake Hartwell. (Multiple bubbles at a single location represent replicate field samples.)

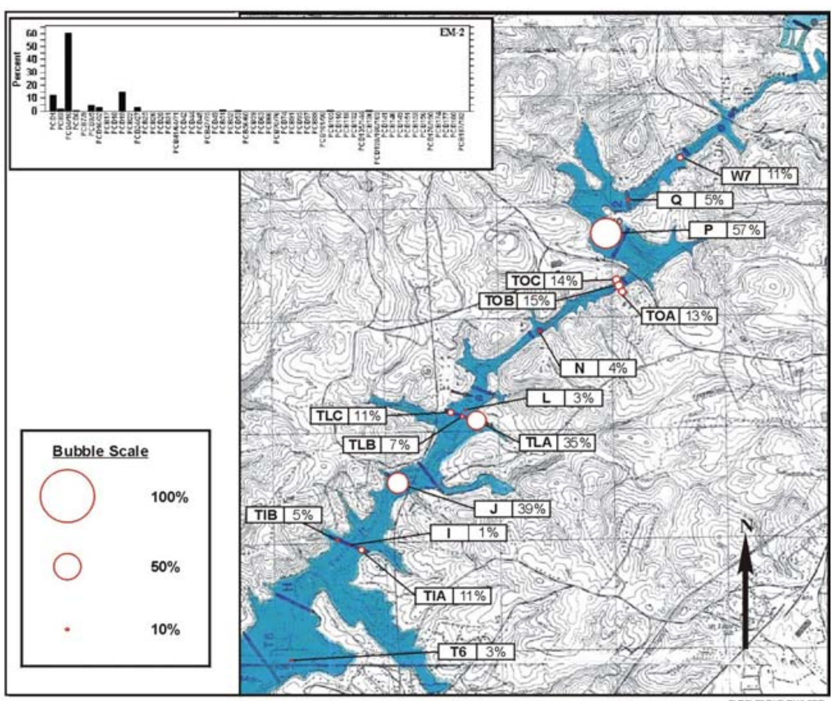

Figure 5-15. Bubble Map of EM-2 Distributions in Surface Sediment Samples from Lake Hartwell Sediment Cores. (Multiple bubbles at a single transect represent surface samples from multiple cores at that transect location.)

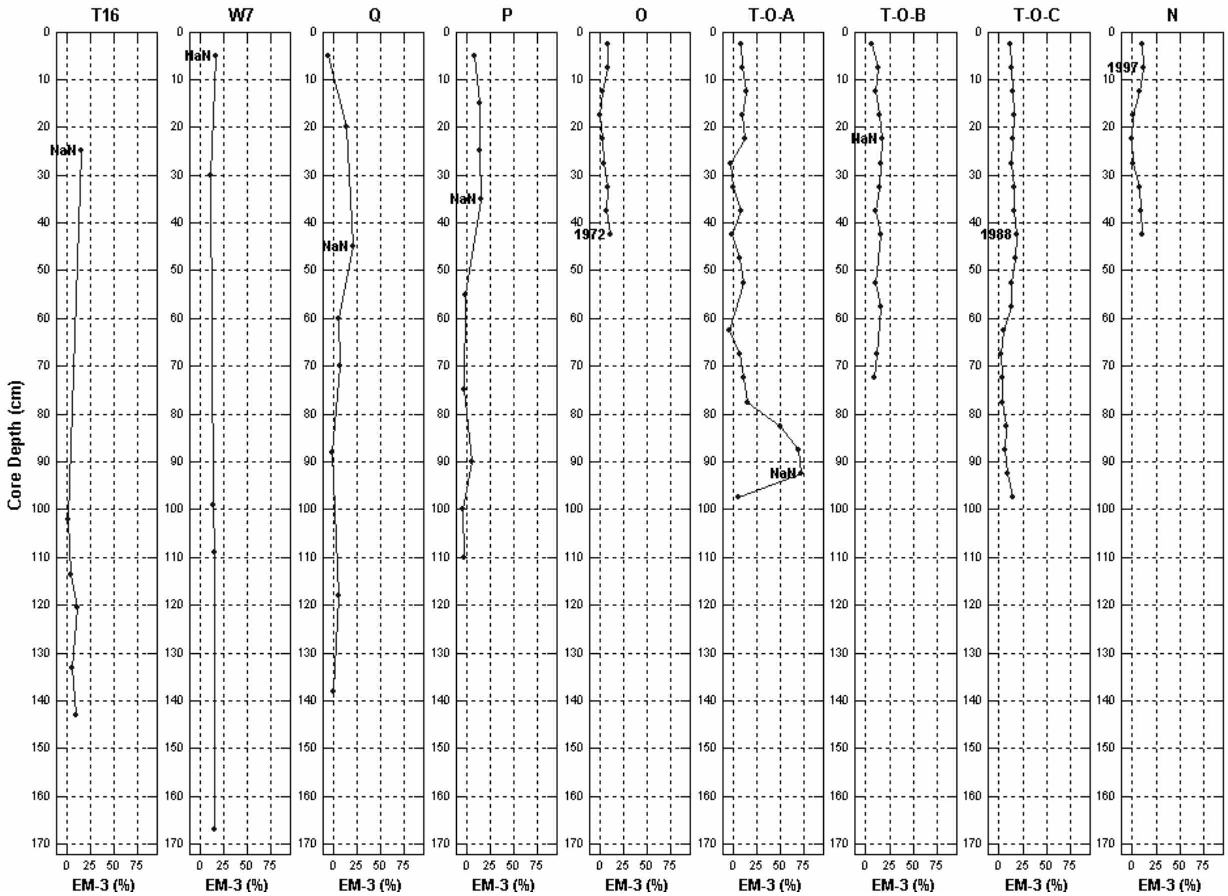

Figure 5-16. Vertical EM-3 Distributions in the Nine Northern-Most Lake Hartwell Cores, Including Cores T16, W7, Q, P, O, T-O-A, T-O-B, T-O-C, and N. (The T16, W7, Q, P, and all four O cores were noticeably impacted by sand released from the upgradient impoundments. Cores T16, W7, Q, P, O, and N were collected in 2000, and Cores T-O-A, T-O-B, and T-O-C were collected in 2001. “NaN” on residual bar graph indicates that Chiarenzelli et al. (1997) did not quantify the corresponding congener.)

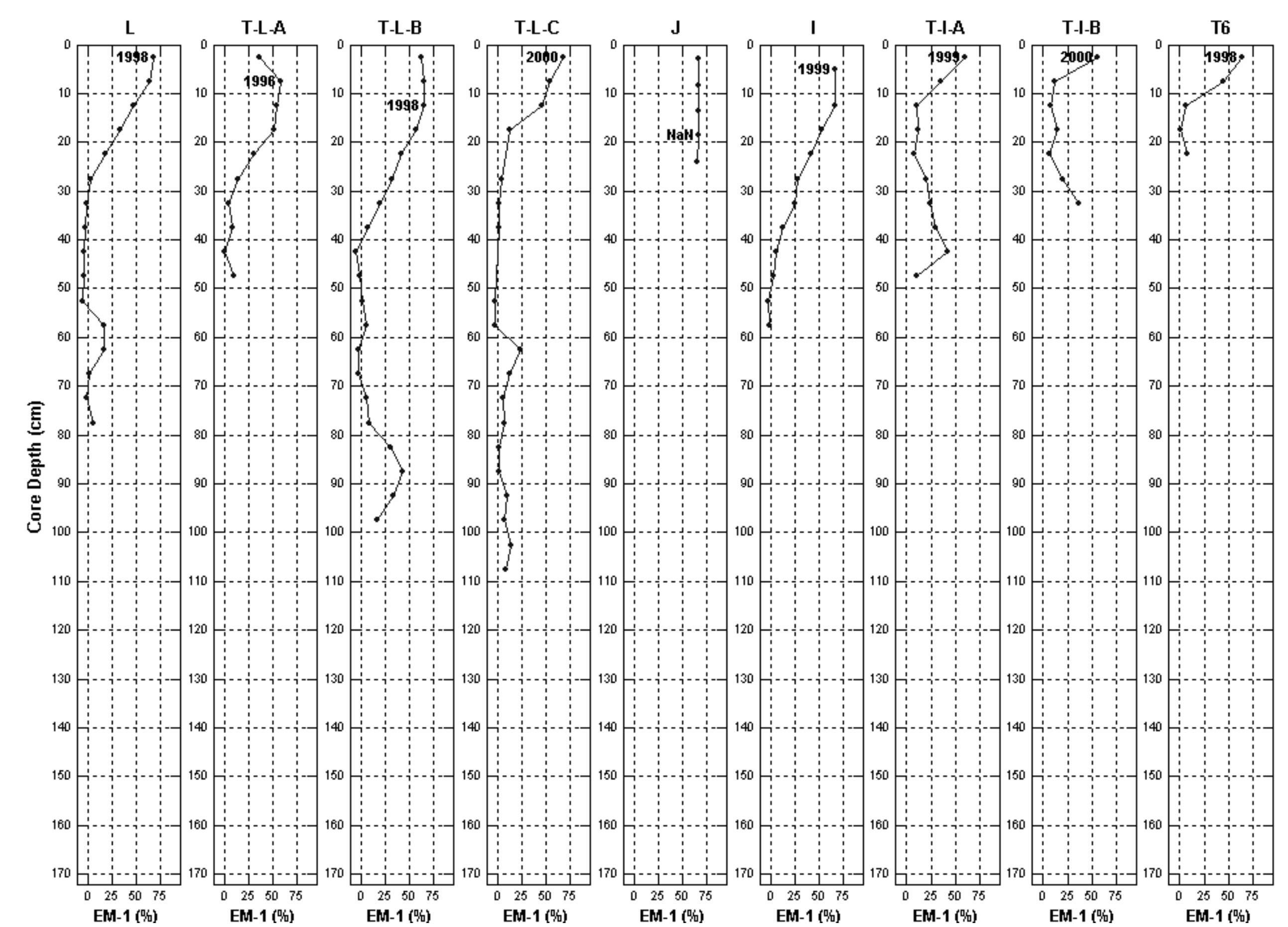

Figure 5-17. Vertical EM-3 Distributions in the Nine Southern-Most Lake Hartwell Cores, Including Cores L, T-L-A, T-L-B, T-L-C, J, I, T-I-A, T-I-B, and T6. (Cores L, J, I, and T6 were collected in 2000, and Cores T-L-A, T-L-B, T-L-C, T-I-A, and T-I-B were collected in 2001. "NaN" on residual bar graph indicates that Chiarenzelli et al. (1997) did not quantify the corresponding congener.)

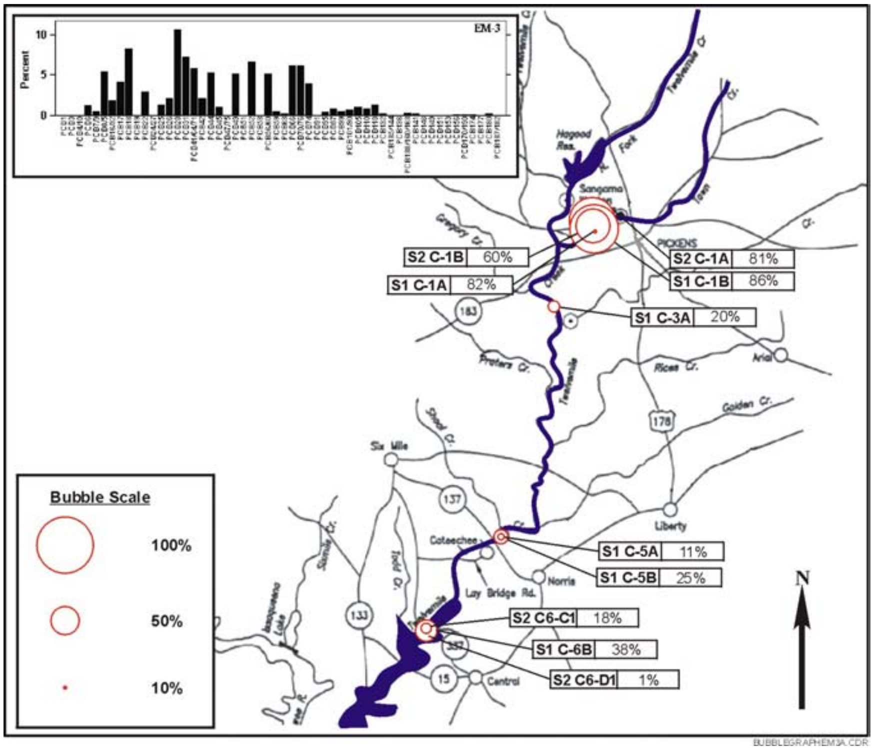

Figure 5-18. Bubble Map of EM-3 Distributions in Surface Sediment Samples from Twelvemile Creek, Upstream of Lake Hartwell. (Multiple bubbles at a single location represent replicate field samples.)

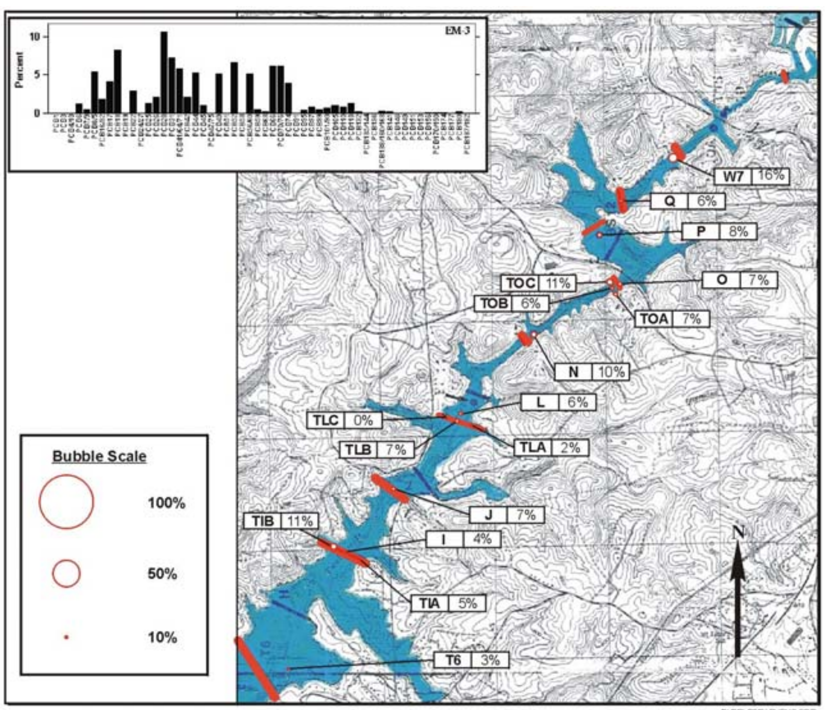

Figure 5-19. Bubble Map of EM-3 Distributions in Surface Sediment Samples from Lake Hartwell Sediment Cores. (Multiple bubbles at a single transect represent surface samples from multiple cores at that transect location.)

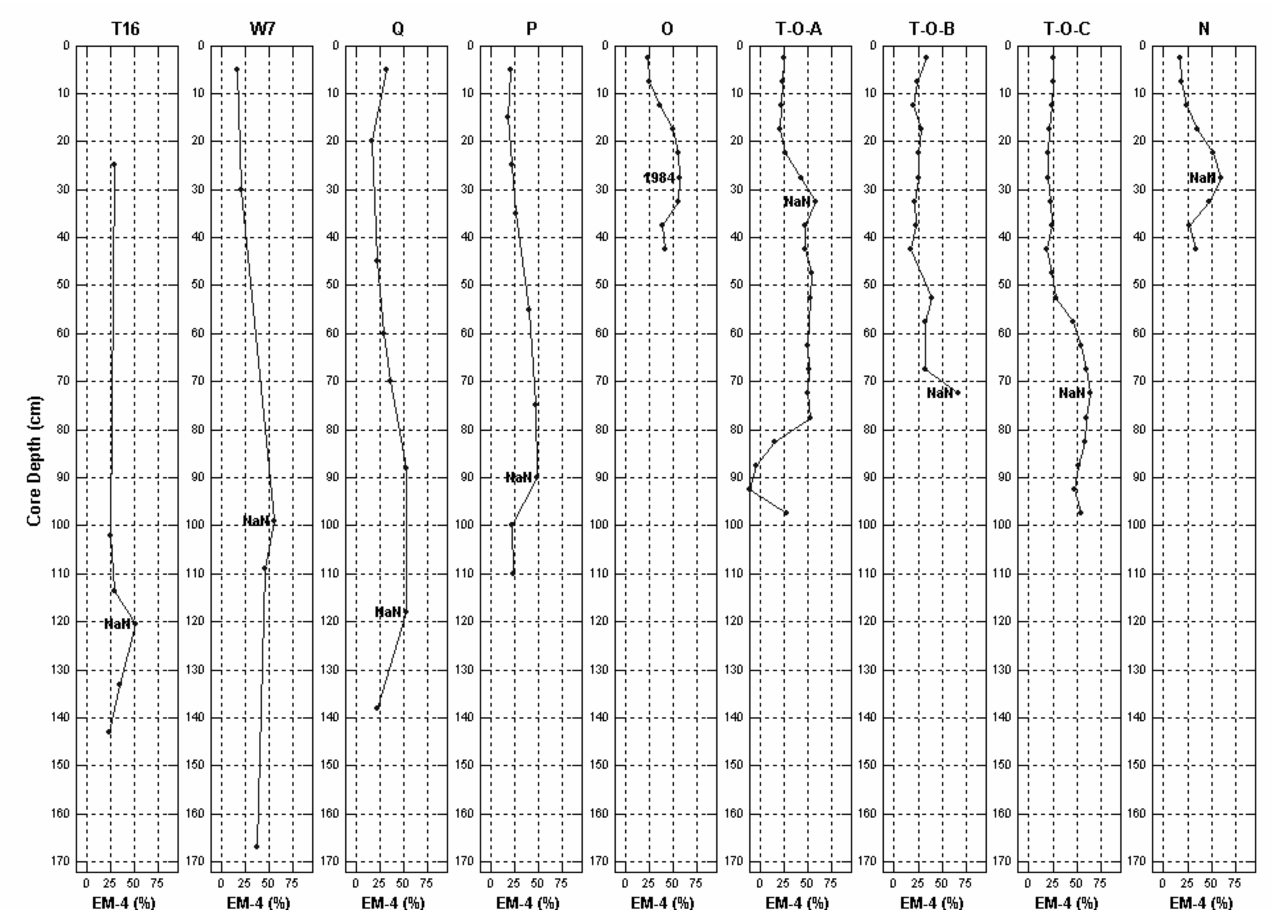

Figure 5-20. Vertical EM-4 Distributions in the Nine Northern-Most Lake Hartwell Cores, Including Cores T16, W7, Q, P, O, T-O-A, T-O-B, T-O-C, and N. (The T16, W7, Q, P, and all four O cores were noticeably impacted by sand released from the upgradient impoundments. Cores T16, W7, Q, P, O, and N were collected in 2000, and Cores T-O-A, T-O-B, and T-O-C were collected in 2001. "NaN" on residual bar graph indicates that Chiarenzelli et al. (1997) did not quantify the corresponding congener.)

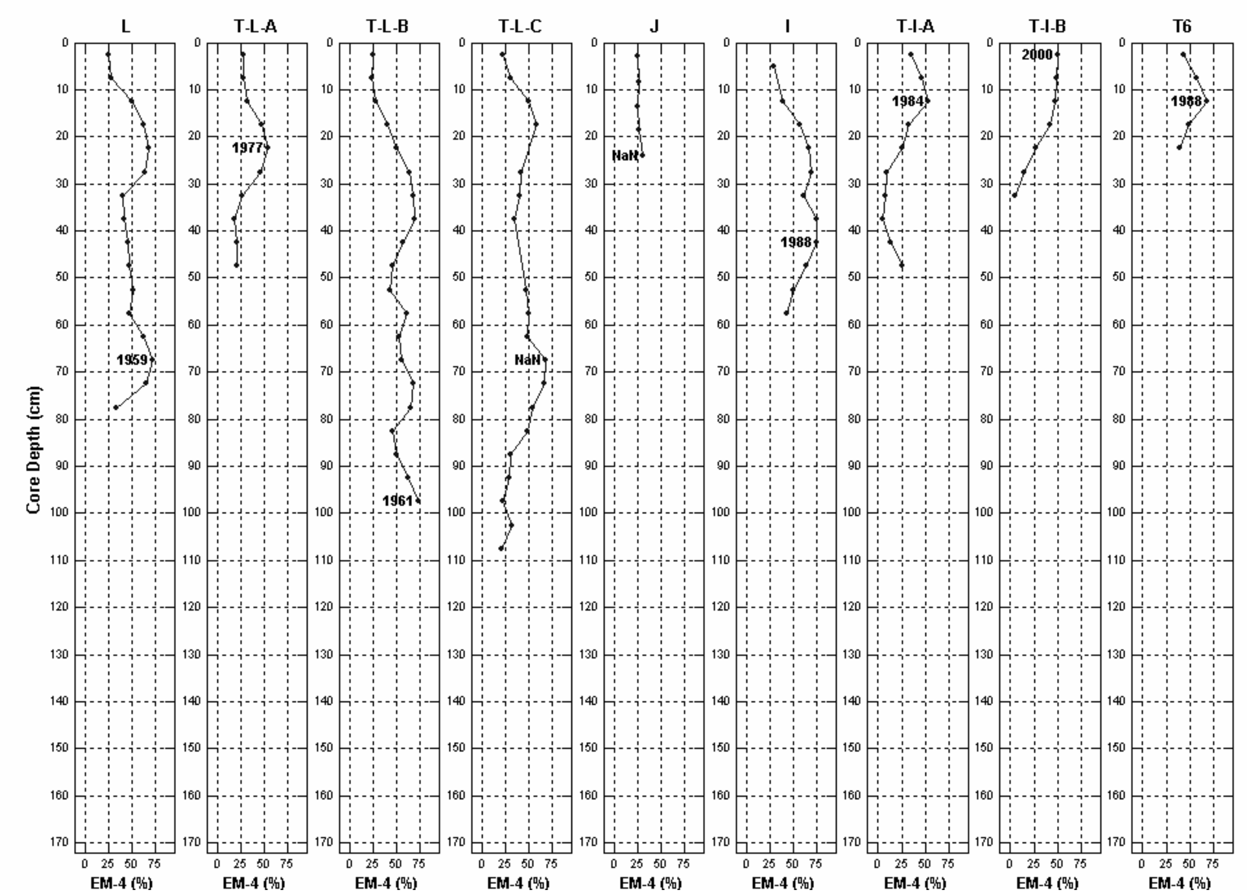

Figure 5-21. Vertical EM-4 Distributions in the Nine Southern-Most Lake Hartwell Cores, Including Cores L, T-L-A, T-L-B, T-L-C, J, I, T-I-A, T-I-B, and T6. (Cores L, J, I, and T6 were collected in 2000, and Cores T-L-A, T-L-B, T-L-C, T-I-A, and T-I-B were collected in 2001. "NaN" on residual bar graph indicates that Chiarenzelli et al. (1997) did not quantify the corresponding congener.)

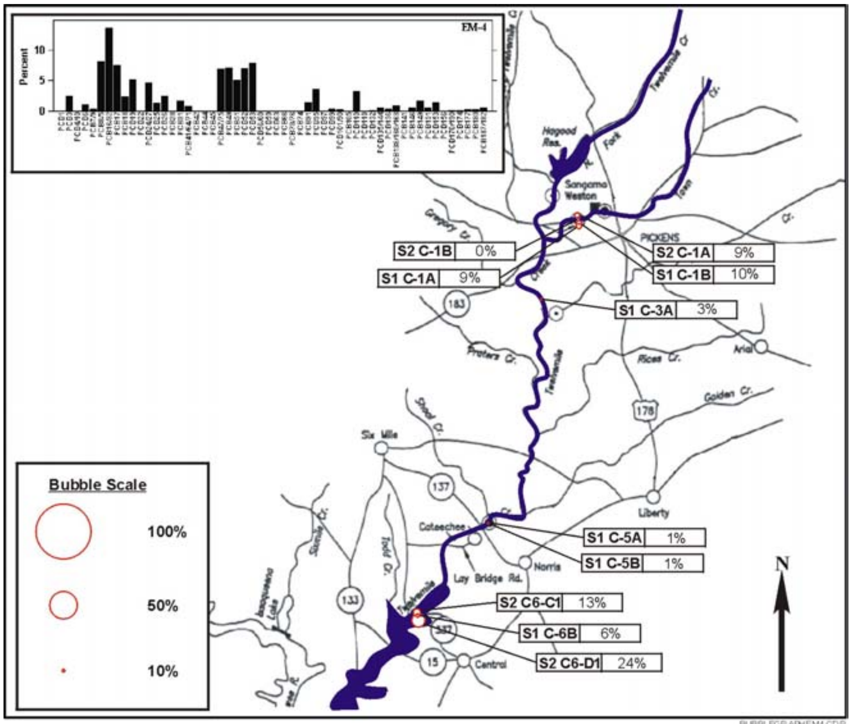

Figure 5-22. Bubble Map of EM-4 Distributions in Surface Sediment Samples from Twelvemile Creek, Upstream of Lake Hartwell. (Multiple bubbles at a single location represent replicate field samples.)

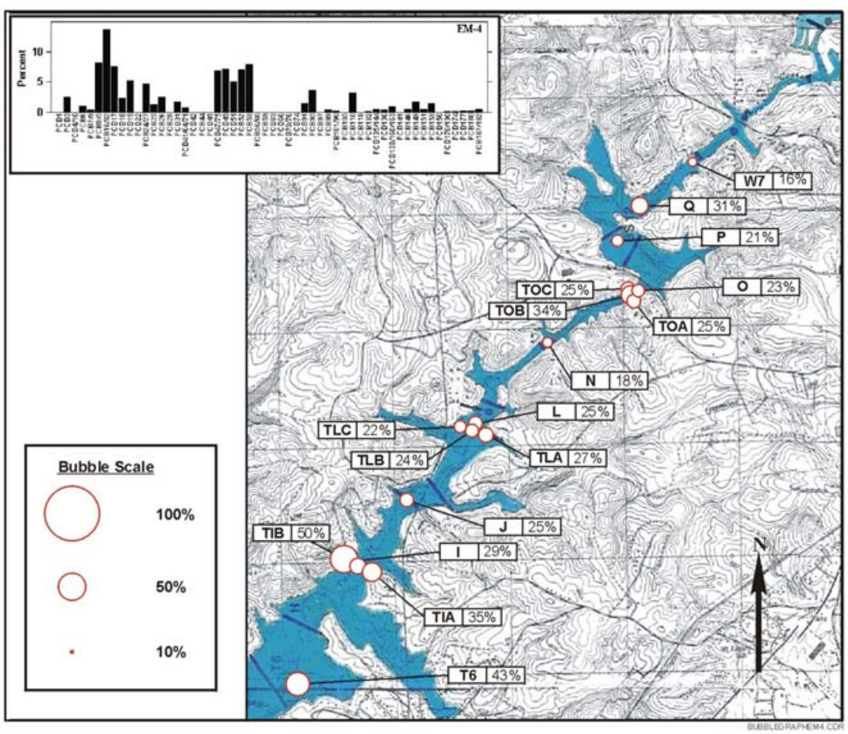

Figure 5-23. Bubble Map of EM-4 Distributions in Surface Sediment Samples from Lake Hartwell Sediment Cores. (Multiple bubbles at a single transect represent surface samples from multiple cores at that transect location.)

5.5 PVA and End-Member Identification Summary

PVA was used to analyze sediment PCB data from Lake Hartwell. Four chemical fingerprints (i.e., end-members) were resolved. Two of the four patterns (EM-1 and EM-3) are slightly-to-moderately weathered source patterns. The other two end-members (EM-2 and EM-4) were interpreted as dechlorination patterns. EM-1 was interpreted to be an unaltered source mixture of Aroclor 1254 and weathered Aroclor 1242 and/or 1016. As expected, the unaltered source pattern is present in highest proportions in recently deposited sediments (dated between 1998 and 1999), and is depleted to low or nondetected concentrations with increasing sediment depth. In most cores, the upper sediment intervals also correspond with lower t-PCB concentrations. The unaltered source patterns in these upper sediment intervals suggest that PCBs in younger, surface sediments are the result of recent transport and deposition from unaltered sources located upgradient. It is unlikely that the EM-1 PCBs are the result of the resuspension and redeposition of deeply deposited sediments from within or upgradient of Lake Hartwell. If the PCBs in the surface sediments resulted from the disturbance and redeposition of deep sediment deposits, a greater degree of dechlorination should have been evident, and the samples would have more closely resembled EM-2 and EM-4 or other reported dechlorination patterns. In fact, an opposite trend was apparent; surface sediments exhibited a relative depletion of lower-chlorinated congeners and an accumulation of higher-chlorinated congeners, suggesting that they were affected by weathering and not dechlorination.

The second source pattern (EM-3) was very similar to an unaltered Aroclor 1242 pattern, but there was some loss of lower-chlorinated congeners in this fingerprint. This pattern was observed in highest proportion in the one location (C-1A and C-1B) where the least altered Aroclor pattern would be expected, immediately downstream of the inferred source (Sangamo-Weston).

EM-2 and EM-4 were interpreted as microbial dechlorination processes related to *Process C* and *Process H'*, respectively. Both patterns were found in highest proportions in buried sediments. Samples with higher proportions of the *Process C* (EM-2) fingerprint coincided with the core intervals with maximum t-PCB concentrations and sediments deposited between 1977 and 1985. The *Process H'* (EM-4) sediments were associated with sediments deposited between 1984 and 1990. *Process C* exhibited the highest proportion of lower-chlorinated congeners and the lowest proportion of tri-, tetra-, and higher-chlorinated congeners, suggesting that these sediments had undergone the most extensive dechlorination at the site. *Process H'* appeared to be an intermediate between the source (EM-1) sediments and *Process C* (EM-2) sediments. The *Process H'* (EM-4) sediments had a higher proportion of lower-chlorinated congeners than did the EM-1 sediments and a higher proportion of higher chlorinated congeners than did the EM-2 sediments.

5.6 Water Samples Resolved in Terms of Sediment Model

Ten (10) Empore™ water samples were collected as part of the 2001 sampling event. These 10 samples were collected along Twelvemile Creek and in Lake Hartwell at Transects L and O. Each 20-L sample was filtered by a glass fiber filter (0.7 µm) in series with and followed by an Empore™ filter. The Empore™ filters were hydrophobic filters designed to remove dissolved PCB mass. The 0.7-µm filters were the smallest pore diameter glass fiber filters available. Hence, the Empore™ filters also filtered small particulate matter less than 0.7-µm in diameter. Table 5-6 shows the mass (ng) collected on the glass fiber and Empore™ filters for each sample, total mass collected (the sum of the two filters), and the PCB concentration (total mass divided by 20 L per sample). Concentrations ranged from 6.31 and 5.43 ng/L at two background locations (C-0 and C-4, respectively), and 23.2 ng/L at background location C-2, to 90.5 ng/L at C-6. The concentrations in the two lake samples were 89.5 ng/L at T-O and 45.9 ng/L at T-L.

Table 5-6. 20-L Filtered Water Samples; Mass Loaded on Filters and Aqueous Concentrations

Sample	Filtered PCB Mass (ng)			PCB Concentration (ng/L)
	Glass Fiber	Empore™	Total	
C-0[a]	19.2	3,833	3852.2	192.6
C-0	3.28	123	126.28	6.31
C-1	42.9	1,162	1204.9	60.2
C-2	3.98	460	463.98	23.2
C-3	81.1	1,359	1440.1	72.0
C-4	1.65	107	108.65	5.43
C-5	39.2	518	557.2	27.6
C-6	49	1,761	1810	90.5
T-O	398	1,391	1789	89.5
T-L	94.2	824	918.2	45.9

(a) The first C-0 sample was filtered through a 1.0-µm glass fiber filter.

Miesch (1976) described a method whereby "external" samples (samples not used in resolution of a mixing model) could be resolved in terms of that model on the back end. Miesch's method was used to resolve the Empore™ water samples in terms of the four EM PVA models, without those water samples influencing the derivation of the model. EM sample mixing proportions for these samples are shown in Table 5-7. The communalities (a measure of fidelity of representation of the reduced dimensional vector; Davis, 1986) were relatively low for all samples (0.48-0.66, where 1.0 indicates a 100% accurate representation). This does not necessarily reflect on the quality of the data. Rather, the low communalities may be a function of the different media sampled. Because the water samples measured PCBs partitioned into suspended sediment in the water column, there was likely a fundamental compositional difference between samples from sediments and water.

Table 5-7. End-Member Mixing Proportions for Empore Water Samples[a] for the Four-End-Member Model

Sample	EM-1 60:40 as 1254:1248	EM-2 Process C Dechlorination	EM-3 Aroclor 1242	EM-4 Process H′ Dechlorination	Communalities (h^2)	Concentration (Total ng)
C-0	68%	-3%	23%	12%	0.5649	3091
C-0	57%	-2%	23%	22%	0.4820	102
C-1	12%	22%	51%	15%	0.5552	1048
C-2	68%	0%	22%	10%	0.6165	374
C-3	43%	15%	33%	9%	0.6211	1181
C-4	48%	4%	27%	20%	0.4911	89
C-5	28%	38%	28%	6%	0.6550	475
C-6	32%	41%	19%	9%	0.6637	1597
T-0	13%	49%	20%	18%	0.5844	1327
T-L	20%	38%	24%	17%	0.4929	772

(a) Empore water samples were resolved in using the PVA sediment model, but are "external" samples insofar as they were not used to derive the model. Communalities were generally low (e.g., all <0.7).

The PCB congener composition of the surface water samples is shown in Figure 5-24. Only PCBs used in the PVA model are presented. Most other PCBs were very low or below detection, particularly the high-molecular-weight PCBs. The highest EM contributions in the aqueous samples were from the two relatively unaltered Aroclor patterns, namely EM-1 and EM-3, which represented the 60/40 Aroclor 1248/1254 mixture and Aroclor 1242, respectively.

The background samples (C-0, C-2, and C-4) had the lowest relative concentrations of low-molecular-weight PCBs, with only trace PCB concentrations of congeners below PCB28 (2,4,4′-trichlorobiphenyl). Closer to the former Sangamo-Weston plant (C-1 and C-3;), the distribution more closely resembled EM-1 and PCBs were broadly distributed among mono-, di-, tri-, tetra-, and pentachlorobiphenyl congeners. Major peaks in these three samples included PCB4/10 (2,2′/2,6-dichlorobiphenyl), PCB16/32 (2,2′,3/2,4′,6-trichlorobiphenyl), PCB17 (2,2′,4-trichlorobiphenyl), PCB18 (2,2′,5-trichlorobiphenyl), PCB19 (2,2′,6-trichlorobiphenyl), PCB28 (2,4,4′-trichlorobiphenyl), PCB52 (2,2′,5,5′-tetrachlorobiphenyl), PCB70/76 (2,3′,4′,5/2′,3,4,5-tetrachlorobiphenyl), PCB95 (2,2′,3,5′,6-pentachlorobiphenyl), and PCB101/90 (2,2′,4,5,5′/2,2′,3,4′,5-pentachlorobiphenyl).

EM-2 (*Process C*) was observed in relatively high proportions (>35%) in the four samples located furthest downstream from the Sangamo-Weston plant in Twelvemile Creek (C-5 and C-6) and in Lake Hartwell (T-O and T-L). Direct inspection of the raw sample compositions indicates that these samples exhibit a congener pattern consistent with *Process C* dechlorination. Thus, the proportion of EM-2 and the relative accumulation of lower-molecular-weight PCBs appeared to increase with distance from the former Sangamo-Weston plant and with residence time in the river/lake ecosystem. Whereas this could suggest that some dechlorination occurred during sediment transport through Twelvemile Creek and into the lake, another interpretation is that EM-2 is characterized by relatively low-molecular-weight/highly soluble PCB congeners which would more likely appear in the aqueous phase of the lake ecosystem.

The Empore™-filtered water provided insight into the magnitude and distribution of PCB congeners in aqueous samples in Twelvemile Creek and Lake Hartwell. One caveat to these results was the presence of higher-than-expected PCB concentrations in the three Empore™ rinsate samples run between field samples after undergoing an ethanol/water rinse procedure. The wash procedure consisted of washing the equipment with 100 mL ethanol followed by two 100-mL water rinses; rinsate samples were collected by passing 20-mL Millipore water through the equipment after rinsing. The three rinsate samples measured 381 ± 20 ng/filter; the standard deviation was only 5% of the average, demonstrated that all three rinsates exhibited the same magnitude of PCBs loaded onto the Empore™ filters. Furthermore, the t-PCB concentrations in the rinsate samples were independent of the preceding sample and demonstrated no apparent effect on the following samples. Rinsate samples 1, 2, and 3 were collected following samples C-3, C-5, and the LCS blank spike (the LCS blank spike had the highest PCB concentration of all samples; ≈ 10,000 ng) and preceded samples C-4, T-0, and C-6, respectively.

Figure 5-25 illustrates the congener distribution of the Empore™ rinsate samples, showing only the PCBs used in the PVA model. The rinsate samples all were extremely similar and most closely resemble the background samples collected at C-0, C-2, and C-4. The reason for the relatively high background Empore™ concentrations remains unknown. Using 20 L of water, the Empore™ rinsate concentrations represent approximately 18 to 20 ng/L, concentrations that exceeded even some of the field samples. Laboratory notes and QA/QC data were investigated thoroughly without finding an apparent cause of the high rinsate concentrations. The t-PCB concentrations loaded onto the 0.7-μm glass fiber filters measured 2.1, 2.3, and 2.1 ng/L for Rinsate samples 1, 2, and 3, respectively, suggesting that the rinsate procedure effectively removed the particulate PCB mass.

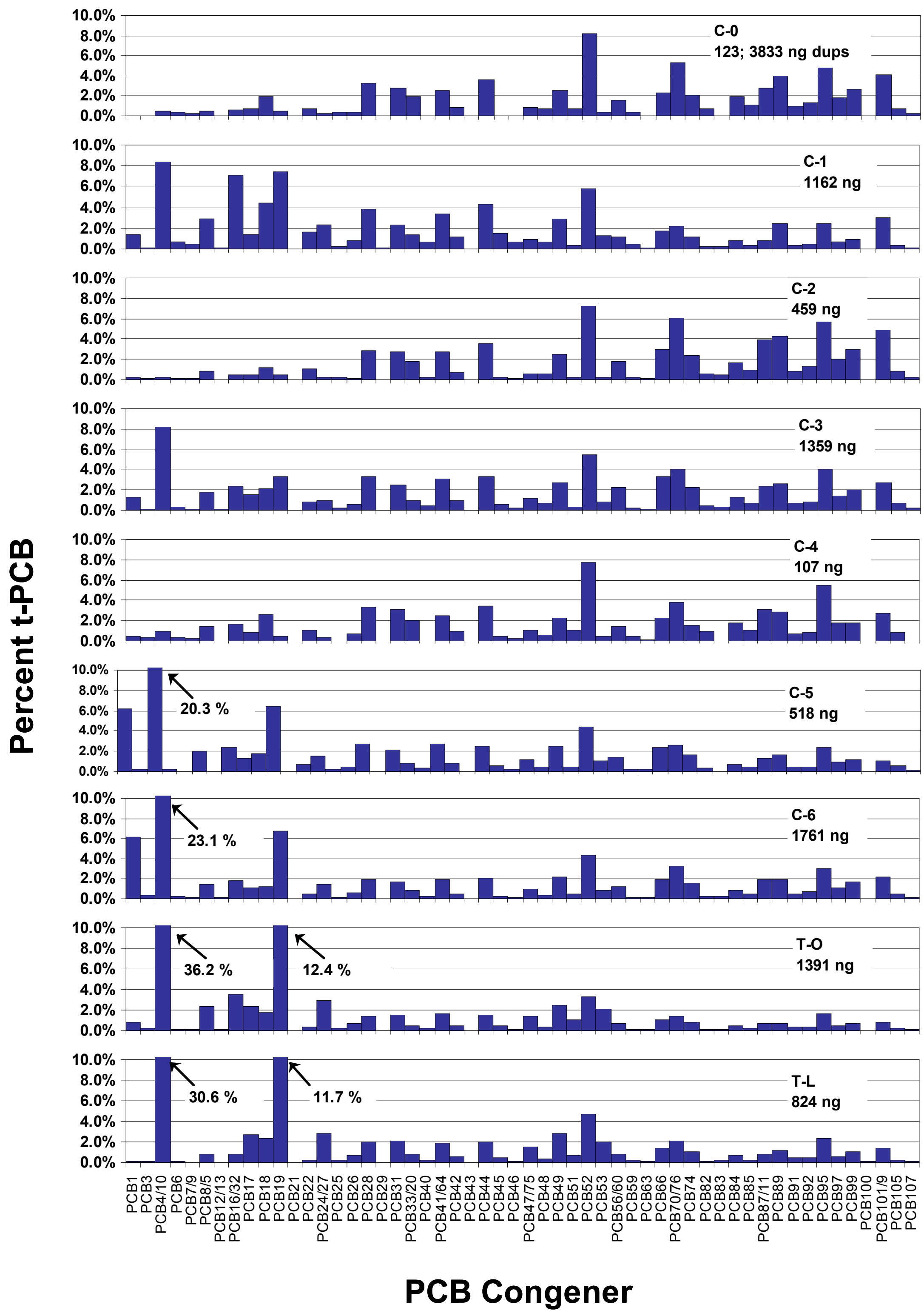

Figure 5-24. Congener Patterns of Empore™ Water Samples Showing PCB Congeners Used in the PVA Model

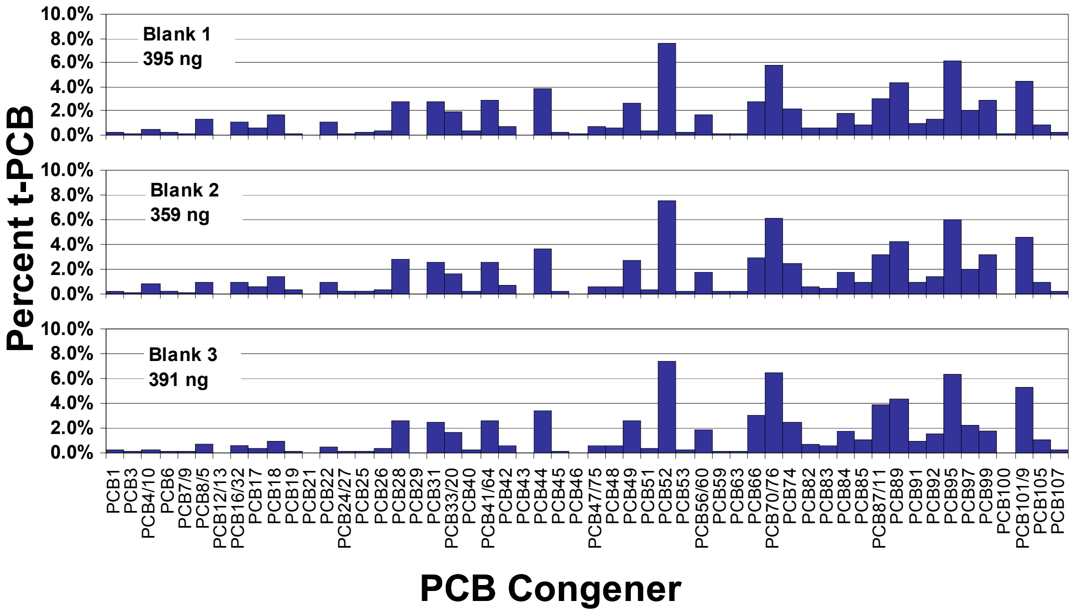

Figure 5-25. Congener Patterns of Empore™ Blank (Rinsate) Samples

6.0 AGE DATING RESULTS AND LAKE HARTWELL SEDIMENTATION RATES

Sediment cores from Twelvemile Creek/Lake Hartwell were age dated using the natural radioisotope ^{210}Pb. The activity of ^{137}Cs, a radioisotope present in the environment primarily from atmospheric fallout from nuclear weapons testing, also was measured in 15 samples and was used to confirm the age dating. Both of these isotopes entered the river system primarily from atmospheric deposition and adsorbed to the surface of sediment particles. ^{210}Pb is a decay product of the uranium-238 (^{238}U) decay series and has a half-life of 22.3 years. Crustal material contains ^{238}U and ^{210}Pb that is in equilibrium with the decay of ^{238}U. This activity of ^{210}Pb in equilibrium with ^{238}U is referred to as "supported", and ^{210}Pb that is derived from atmospheric deposition and the water column is referred to as "excess". The activity of excess ^{210}Pb decreases with depth in sediments as ^{210}Pb decays; the depth at which the activity is half that of the surface is 22.3 years old, the half-life of ^{210}Pb. The ^{210}Pb data were augmented by ^{137}Cs dating for selected samples in Cores T-L-A, T-L-B, T-O-B, and T-O-C.

^{137}Cs was released in the atmosphere mainly between 1957 and 1965. In freshwater systems, ^{137}Cs is bound to clay minerals. In many lake cores, ^{137}Cs profiles are recorded as a peak with no detectable activity prior to the 1950s and relatively little activity since the mid-1960s. However, soil erosion and sediment deposition containing ^{137}Cs can result in the presence of ^{137}Cs in deposits many years after the 1960s. For the purpose of dating sediments, the ^{137}Cs profile is used as a benchmark for sediment deposited in the early 1960s.

Because these isotopes adsorb to the surface of particles, fine-grained sediment contains much higher activity than sandy sediment. Two assumptions for dating sediments are: (1) the sediment grain size is relatively uniform though the profile to be dated, and (2) the sedimentation rate has been uniform over the period to be dated (i.e., over the length of the core). If these two conditions are not met (i.e., there has not been a constant sedimentation rate or uniform grain size), the dating procedure is not likely to provide accurate results. These two criteria are evaluated through particle grain size and moisture content analyses.

For this study, moisture content, PSD, TOC, and ^{210}Pb concentrations were determined for all core segments. All analyses were conducted in accordance with the methods described in the QAPP (Battelle, 2000). The concentration/activity of ^{210}Pb, moisture content, PSD, and TOC values for the eight cores are listed in Tables 6-1 to 6-8.

The sedimentation process in Twelvemile Creek/Lake Hartwell has been influenced by two hydroelectric impoundments and a water supply reservoir upgradient of Lake Hartwell. Historically, the dams have acted as temporary sediment impoundments. Sediment release events created multiple silt/sand layers in the river and lake. These layers were most evident in Cores T-O-B, T-L-A, and T-I-B. As expected, the sand layers in these three cores contained very low TOC concentrations, relatively large grain size, and little ^{210}Pb (Tables 6-2, 6-4, and 6-8, respectively). The irregular sedimentation patterns in other cores meant that portions of some cores also could not be dated. Core T-L-C could not be dated due to the occurrence of two ^{210}Pb peaks, one between 0 and 50 cm and the second between 55 and 100 cm (Table 6-6).

Seven of the eight cores collected in Lake Hartwell and analyzed for ^{210}Pb could be dated. The data used to calculate sedimentation rates for the seven dated cores (Cores T-O-A, T-O-B, T-O-C, T-L-A, T-L-B, T-I-A, and T-I-B) are shown in Tables 6-9 through 6-15, respectively. Each table includes the following information: the depth interval and mean depth for each core section (cm), the total accumulated dry sediment from the surface of the sediment core to the mean depth of the section (g/cm^2), the years since the section was deposited (yr) and the year of deposition, and the sediment accumulation rate in units of cm/yr of wet sediment. Cores T-O-A, T-O-B, T-O-C, T-L-A, T-L-B, T-I-A, and T-I-B were dated as far back as 1952, 1992, 1952, 1941, 1970, 1993, and 1992, respectively.

Sediment accumulation rates (cm/yr) are plotted against core segment age in Figure 6-1. Sedimentation rates are highest at the surfaces of the cores and decrease rapidly with core depth due to sediment compaction and water loss with depth. T-O-B and T-L-B had the highest average sediment accumulation rates of the seven age dated cores. Sediment accumulation rates for T-I-A and T-I-B were similar; the average rates for these cores were 2.81 and 2.87 cm/yr, respectively.

The sediment accumulation rates were used to calculate sedimentation rates, measured in g/cm^2-yr. This is a measure of the mass of sediment deposited per year, as opposed to the sediment depth per year. Sedimentation rates should be relatively constant and are not influenced by sediment compaction. The sedimentation rates measured in seven of the eight Lake Hartwell cores are listed in Table 6-16. Core T-L-B had the highest sedimentation rate of 5.50 g/cm^2-yr, and Core T-L-A had the lowest rate of 1.05 g/cm^2-yr.

Because of the greater water content in surface sediments than subsurface sediments, the apparent sediment accumulation rate in cm/yr is much higher near the surface than at depth. The sedimentation rates for the seven cores ranged from 1.05 to 5.50 $g/cm^2/yr$, and the sediment accumulation rates ranged from 0.708 to 22.4 cm/yr.

Table 3-6 (Section 3) summarized the required sedimentation at T-L-A, T-L-B, T-I-A, and T-I-B to achieve t-PCB concentrations of 1 mg/kg, 0.4 mg/kg, and 0.05 mg/kg[a]. The 1.0-mg/kg t-PCB concentration is the surface sediment cleanup goal for the lake, and the periods necessary to achieve these cleanup goals are shown in Table 6-17 based on the known sediment accumulation rates shown in Tables 6-9 through 6-15 and in Figure 6-1.

[a] The 0.4 mg/kg goal identified in the ROD (U.S. EPA, 1994) was the main value for the site-specific quality criteria, calculated using the U.S. EPA's equilibrium partitioning approach. The 0.05 mg/kg value reported in the ROD was based on NOAA's evaluation of published criteria with biological effects on aquatic life. Both values are evaluated in this report because they were both reported in the 1994 ROD.

Table 6-1. ^{210}Pb, Moisture Content, PSD, and TOC Results for Core T-O-A

Core Segment	Segment Depth (cm)	^{210}Pb (dpm/g)	% Moisture	Particle Size Distribution				%TOC
				% Gravel	% Sand	% Silt	% Clay	
T-O-A-2	5-10	6.29	147	0	24	59	17	3.35
T-O-A-3	10-15	5.60	132	0	27	52	21	3.23
T-O-A-4	15-20	6.79	148	0	22	56	22	3.52
T-O-A-5	20-25	5.58	154	1	16	57	26	2.90
T-O-A-6	25-30	5.62	94	1	33	45	21	2.33
T-O-A-7	30-35	3.72	69	2	52	30	16	1.71
T-O-A-8	35-40	4.88	84	0	51	32	17	2.08
T-O-A-9	40-45	3.28	83	0	45	39	16	2.20
T-O-A-10	45-50	2.36	53	0	65	22	13	1.30
T-O-A-11	50-55	3.35	81	0	45	33	22	2.01
T-O-A-12	55-60	3.31	96	1	36	40	23	2.46
T-O-A-13	60-65	4.66	76	0	41	34	25	1.88
T-O-A-14	65-70	2.73	64	0	57	24	19	1.52
T-O-A-15	70-75	3.90	82	1	43	35	21	1.75
T-O-A-16	75-80	3.37	74	0	46	35	19	1.77
T-O-A-17	80-85	2.25	41	0	62	22	16	1.46
T-O-A-18	85-90	3.24	42	0	49	32	19	1.95
T-O-A-19	90-95	2.22	34	0	64	21	15	1.28
T-O-A-20	95-100	2.24	31	0	78	12	10	0.82

Table 6-2. ^{210}Pb, Moisture Content, PSD, and TOC Results for Core T-O-B

Core Segment	Segment Depth (cm)	^{210}Pb (dpm/g)	% Moisture	Particle Size Distribution				%TOC
				% Gravel	% Sand	% Silt	% Clay	
T-O-B-1	0-5	4.10	189	1	62	26	11	5.3
T-O-B-3	10-15	5.84	115	1	59	33	7	6.57
T-O-B-4	15-20	4.87	146	6	70	13	11	7.46
T-O-B-5	20-25	4.83	130	6	78	11	5	5.81
T-O-B-6	25-30	4.93	112	3	78	8	11	5.53
T-O-B-7	30-35	5.54	125	0	48	39	13	4.64
T-O-B-8	35-40	6.36	129	1	23	50	26	3.25
T-O-B-9	40-45	3.82	65	3	56	24	17	1.6
T-O-B-10	45-50	1.01	33	7	80	4	9	0.96
T-O-B-11	50-55	0.62	25	7	76	17	0	1.7
T-O-B-13	60-65	0.24	21	12	81	5	2	0.97
T-O-B-15	70-75	0.20	20	6	93	1	0	0.065
T-O-B-17	80-85	NA	11	16	83	1	0	0.033
T-O-B-19	90-95	NA	15	12	86	2	0	0.044

Shading indicates that sand was visually evident in the field during coring.

Table 6-3. ^{210}Pb, Moisture Content, PSD, and TOC Results for Core T-O-C

Core Segment	Segment Depth (cm)	^{210}Pb (dpm/g)	% Moisture	Particle Size Distribution				%TOC
				% Gravel	% Sand	% Silt	% Clay	
T-O-C-1	0-5	5.87	NA	NA	NA	NA	NA	3.78
T-O-C-2	5-10	2.48	85	0	67	22	11	1.96
T-O-C-3	10-15	2.68	67	0	69	21	10	1.26
T-O-C-4	15-20	4.59	107	0	45	37	18	2.64
T-O-C-5	20-25	6.85	132	0	25	53	22	3.27
T-O-C-6	25-30	6.84	52	1	27	39	33	3.83
T-O-C-7	30-35	6.63	130	0	34	46	20	4.85
T-O-C-8	35-40	5.51	117	3	56	28	13	5.12
T-O-C-9	40-45	5.10	117	1	38	42	19	4.44
T-O-C-10	45-50	5.13	112	2	50	29	19	3.90
T-O-C-11	50-55	4.24	110	2	49	28	21	3.81
T-O-C-12	55-60	4.19	75	0	60	29	11	2.07
T-O-C-13	60-65	4.19	96	0	42	36	22	2.40
T-O-C-14	65-70	5.36	114	0	16	52	32	2.82
T-O-C-15	70-75	4.40	84	0	41	31	28	2.41
T-O-C-16	75-80	3.62	64	0	50	33	17	2.21
T-O-C-17	80-85	1.46	46	1	76	9	14	0.25
T-O-C-18	85-90	0.40	25	0	98	0	2	0.073
T-O-C-19	90-95	2.68	55	0	66	20	14	0.79
T-O-C-20	95-100	0.91	32	0	86	6	8	1.14

NA = not analyzed
Shading indicates that sand was visually evident in the field during coring.

Table 6-4. ^{210}Pb, Moisture Content, PSD, and TOC Results for Core T-L-A

Core Segment	Segment Depth (cm)	^{210}Pb (dpm/g)	% Moisture	Particle Size Distribution				%TOC
				% Gravel	% Sand	% Silt	% Clay	
T-L-A-1	0-5	8.92	127	0	10	44	46	2.73
T-L-A-2	5-10	9.79	187	0	5	7	88	2.70
T-L-A-3	10-15	8.29	164	0	6	57	37	2.66
T-L-A-4	15-20	9.88	164	0	7	47	46	2.67
T-L-A-5	20-25	8.05	138	0	11	58	31	2.68
T-L-A-6	25-30	7.39	119	0	13	32	55	2.58
T-L-A-7	30-35	5.46	264	0	8	84	8	2.12
T-L-A-8	35-40	4.15	99	1	45	28	26	2.15
T-L-A-9	40-45	2.12	46	0	77	15	8	0.88
T-L-A-10	45-50	1.13	27	0	93	5	2	0.39
T-L-A-11	50-55	1.08	27	0	93	4	3	0.26
T-L-A-12	55-60	1.43	25	0	93	6	1	0.23
T-L-A-13	60-65	1.40	29	0	79	12	9	0.58
T-L-A-14	65-70	2.88	43	0	42	33	25	1.16
T-L-A-15	70-75	3.40	47	0	31	40	29	1.31
T-L-A-16	75-80	3.12	48	0	29	38	33	1.27
T-L-A-17	80-85	3.69	44	1	28	37	34	1.22
T-L-A-18	85-90	3.09	39	4	30	36	30	1.17
T-L-A-19	90-95	2.04	34	2	52	23	23	0.84
T-L-A-20	95-100	1.23	25	10	65	9	16	0.40

Shading indicates that sand was visually evident in the field during coring.

Table 6-5. ^{210}Pb, Moisture Content, PSD, and TOC Results for Core T-L-B

Core Segment	Segment Depth (cm)	^{210}Pb (dpm/g)	% Moisture	Particle Size Distribution				%TOC
				% Gravel	% Sand	% Silt	% Clay	
T-L-B-1	0-5	11.8	254	0	6	51	43	2.96
T-L-B-2	5-10	11.12	170	0	6	54	40	2.99
T-L-B-3	10-15	7.68	162	0	6	49	45	2.90
T-L-B-4	15-20	5.58	166	0	6	48	46	2.88
T-L-B-5	20-25	6.19	139	0	10	50	40	3.11
T-L-B-6	25-30	5.85	125	0	17	41	42	2.77
T-L-B-7	30-35	6.60	114	0	21	40	39	2.56
T-L-B-8	35-40	7.82	121	0	16	46	38	2.75
T-L-B-9	40-45	6.58	120	0	11	47	42	3.02
T-L-B-10	45-50	6.83	123	0	9	36	55	3.40
T-L-B-11	50-55	6.11	123	0	8	54	38	3.56
T-L-B-12	55-60	6.04	111	0	13	84	3	3.02
T-L-B-13	60-65	4.19	105	0	19	53	28	2.80
T-L-B-14	65-70	4.07	102	0	19	53	28	2.49
T-L-B-15	70-75	4.82	137	0	7	60	33	3.37
T-L-B-16	75-80	3.93	101	0	35	35	30	2.34
T-L-B-17	80-85	3.91	76	0	54	9	37	1.56
T-L-B-18	85-90	5.11	76	0	44	17	39	1.62
T-L-B-19	90-95	5.71	97	0	27	25	48	2.17
T-L-B-20	95-100	3.70	72	0	59	14	27	1.16

Shading indicates that sand was visually evident in the field during coring.

Table 6-6. ^{210}Pb, Moisture Content, PSD, and TOC Results for Core T-L-C

Core Segment	Segment Depth (cm)	^{210}Pb (dpm/g)	% Moisture	Particle Size Distribution				%TOC
				% Gravel	% Sand	% Silt	% Clay	
T-L-C-1	0-5	7.70	279	0	11	56	33	3.18
T-L-C-2	5-10	6.92	192	0	6	53	41	2.93
T-L-C-3	10-15	6.70	169	0	5	41	54	2.95
T-L-C-4	15-20	6.05	151	1	6	46	47	2.58
T-L-C-5	20-25	4.82	126	0	11	60	29	3.02
T-L-C-6	25-30	4.73	110	0	19	56	25	2.84
T-L-C-7	30-35	4.59	132	0	38	39	23	4.17
T-L-C-8	35-40	4.26	111	0	55	27	18	4.21
T-L-C-9	40-45	4.93	99	0	24	52	24	2.48
T-L-C-10	45-50	5.23	117	0	7	53	40	2.87
T-L-C-11	50-55	7.23	135	0	1	37	62	2.46
T-L-C-12	55-60	7.31	136	0	2	27	71	2.36
T-L-C-13	60-65	7.31	127	0	2	37	61	2.38
T-L-C-14	65-70	6.11	108	0	1	38	61	2.34
T-L-C-15	70-75	6.84	132	0	2	24	74	2.38
T-L-C-16	75-80	4.72	103	0	14	27	59	2.19
T-L-C-17	80-85	2.41	67	0	56	20	24	1.25
T-L-C-18	85-90	3.24	62	1	53	30	16	1.64
T-L-C-19	90-95	4.17	61	1	19	48	32	2.70
T-L-C-20	95-100	4.22	51	3	21	45	31	1.80

Shading indicates that sand was visually evident in the field during coring.

Table 6-7. ^{210}Pb, Moisture Content, PSD, and TOC Results for Core T-I-A

Core Segment	Segment Depth (cm)	^{210}Pb (dpm/g)	% Moisture	Particle Size Distribution				%TOC
				% Gravel	% Sand	% Silt	% Clay	
T-I-A-1	0-5	10.5	308	0	6	35	59	2.65
T-I-A-2	5-10	7.22	217	0	4	28	68	2.46
T-I-A-3	10-15	7.78	177	0	5	18	77	2.31
T-I-A-4	15-20	7.73	132	0	17	17	66	2.17
T-I-A-5	20-25	2.61	77	2	46	24	28	1.85
T-I-A-6	25-30	2.73	60	0	45	28	27	1.81
T-I-A-7	30-35	3.80	68	1	32	32	35	2.07
T-I-A-8	35-40	4.33	68	0	21	38	41	2.40
T-I-A-9	40-45	5.36	65	0	15	42	43	2.13
T-I-A-10	45-50	5.45	62	1	14	42	43	2.05
T-I-A-11	50-55	2.10	55	0	12	45	43	1.92
T-I-A-12	55-60	2.62	52	0	16	45	39	1.66
T-I-A-13	60-65	2.77	53	0	19	39	42	1.40
T-I-A-14	65-70	4.42	54	0	11	44	45	1.59
T-I-A-15	70-75	2.36	53	1	11	42	46	1.61
T-I-A-16	75-80	3.87	51	0	6	44	50	1.54
T-I-A-17	80-85	4.74	53	1	9	42	48	1.55
T-I-A-18	85-90	2.15	49	1	13	42	44	1.70
T-I-A-19	90-95	3.33	53	0	23	40	37	1.41
T-I-A-20	95-100	2.07	45	0	43	28	29	1.10

Table 6-8. ^{210}Pb, Moisture Content, PSD, and TOC Results for Core T-I-B

Core Segment	Segment Depth (cm)	^{210}Pb (dpm/g)	% Moisture	Particle Size Distribution				%TOC
				% Gravel	% Sand	% Silt	% Clay	
T-I-B-1	0-5	12.1	284	0	5	30	65	2.55
T-I-B-2	5-10	8.50	234	0	5	26	69	2.24
T-I-B-3	10-15	9.26	174	0	4	17	79	2.13
T-I-B-4	15-20	8.79	136	0	13	14	73	2.07
T-I-B-5	20-25	6.99	80	1	49	20	30	1.77
T-I-B-6	25-30	3.42	64	1	42	30	27	2.24
T-I-B-7	30-35	3.46	62	0	44	28	28	2.00
T-I-B-8	35-40	3.32	41	0	74	11	15	0.86
T-I-B-9	40-45	2.27	38	0	68	18	14	0.65
T-I-B-10	45-50	2.23	37	0	70	18	12	0.69
T-I-B-11	50-55	2.07	35	0	64	19	17	0.79
T-I-B-12	55-60	2.73	47	0	47	26	27	1.10
T-I-B-13	60-65	3.00	45	0	49	29	22	1.15
T-I-B-14	65-70	4.06	50	0	20	44	36	1.34
T-I-B-15	70-75	4.23	50	0	26	43	31	1.40
T-I-B-16	75-80	4.52	52	1	20	44	35	1.55
T-I-B-17	80-85	4.13	47	0	24	43	33	1.39
T-I-B-18	85-90	3.50	53	0	27	42	31	1.35
T-I-B-19	90-95	3.27	51	0	41	37	22	1.47
T-I-B-20	95-100	3.65	51	0	43	32	25	1.39

Shading indicates that sand was visually evident in the field during coring.

Table 6-9. Sediment Accumulation, Sediment Age, Year of Deposition, and Sediment Accumulation Rates for Core T-O-A

Core Segment	Segment Depth (cm)	Mean Depth (cm)	Total Dry Sediment Accumulation at Mean Depth (g/cm^2)	Sediment Age (yrs)	Year of Deposition	Sediment Accumulation Rate (cm/yr)
T-O-A-4	15-20	17.5	2.36	1	2000	12.0
T-O-A-5	20-25	22.5	10.3	4	1997	4.11
T-O-A-6	25-30	27.5	19.3	8	1993	2.85
T-O-A-8	35-40	37.5	29.0	12	1989	2.76
T-O-A-9	40-45	42.5	39.0	15	1986	2.43
T-O-A-11	50-55	52.5	47.4	19	1982	2.46
T-O-A-12	55-60	57.5	57.5	23	1978	2.25
T-O-A-16	75-80	77.5	70.0	28	1973	2.55
T-O-A-18	85-90	87.5	84.3	34	1967	2.41
T-O-A-19	90-95	92.5	101	41	1960	2.12
T-O-A-20	95-100	97.5	121	49	1952	1.88

Table 6-10. Sediment Accumulation, Sediment Age, Year of Deposition, and Sediment Accumulation Rates for Core T-O-B

Core Segment	Segment Depth (cm)	Mean Depth (cm)	Total Dry Sediment Accumulation at Mean Depth (g/cm^2)	Sediment Age (yrs)	Year of Deposition	Sediment Accumulation Rate (cm/yr)
T-O-B-1:6	0-30	15.0	13.4	3	1998	5.77
T-O-B-7	30-35	32.5	31.5	6	1995	5.70
T-O-B-8	35-40	37.5	39.5	7	1994	5.24
T-O-B-9	40-45	42.5	49.8	9	1992	4.72

Table 6-11. Sediment Accumulation, Sediment Age, Year of Deposition, and Sediment Accumulation Rates for Core T-O-C

Core Segment	Segment Depth (cm)	Mean Depth (cm)	Total Dry Sediment Accumulation at Mean Depth (g/cm^2)	Sediment Age (yrs)	Year of Deposition	Sediment Accumulation Rate (cm/yr)
T-O-C-5	20-25	22.5	2.6	1	2000	22.4
T-O-C-6	25-30	27.5	18.9	7	1994	3.94
T-O-C-7	30-35	32.5	26.9	10	1991	3.29
T-O-C-8	35-40	37.5	34.9	13	1988	2.93
T-O-C-10	45-50	47.5	43.5	16	1985	2.98
T-O-C-11	50-55	52.5	55.7	20	1981	2.57
T-O-C-13	60-65	62.5	65.9	24	1977	2.58
T-O-C-15	70-75	72.5	77.1	28	1973	2.57
T-O-C-16	75-80	77.5	93.0	34	1967	2.27
T-O-C-19	90-95	92.5	107	39	1962	2.35
T-O-C-20	95-100	97.5	135	49	1952	1.87

Table 6-12. Sediment Accumulation, Sediment Age, Year of Deposition, and Sediment Accumulation Rates for Core T-L-A

Core Segment	Segment Depth (cm)	Mean Depth (cm)	Total Dry Sediment Accumulation at Mean Depth (g/cm^2)	Sediment Age (yrs)	Year of Deposition	Sediment Accumulation Rate (cm/yr)
T-L-A-1	0-5	2.5	1.06	2	1999	1.25
T-L-A-2	5-10	7.5	5.21	5	1996	1.50
T-L-A-3	10-15	12.5	11.3	11	1990	1.14
T-L-A-4	15-20	17.5	18.0	17	1984	1.03
T-L-A-5	20-25	22.5	25.2	24	1977	0.938
T-L-A-6	25-30	27.5	32.7	31	1970	0.887
T-L-A-7	30-35	32.5	41.1	39	1962	0.833
T-L-A-8	35-40	37.5	50.6	48	1953	0.781
T-L-A-9	40-45	42.5	62.8	60	1941	0.708

Table 6-13. Sediment Accumulation, Sediment Age, Year of Deposition, and Sediment Accumulation Rates for Core T-L-B

Core Segment	Segment Depth (cm)	Mean Depth (cm)	Total Dry Sediment Accumulation at Mean Depth (g/cm^2)	Sediment Age (yrs)	Year of Deposition	Sediment Accumulation Rate (cm/yr)
T-L-B-1	0-5	2.5	0.804	0	2001	6.09
T-L-B-4	15-20	17.5	3.96	1	2000	14.2
T-L-B-5	20-25	22.5	11.8	4	1997	6.19
T-L-B-7	30-35	32.5	18.4	6	1995	5.74
T-L-B-9	40-45	42.5	26.5	8	1993	5.22
T-L-B-10	45-50	47.5	39.0	12	1989	4.07
T-L-B-11	50-55	52.5	46.7	14	1987	3.67
T-L-B-12	55-60	57.5	55.6	17	1984	3.37
T-L-B-13	60-65	62.5	65.0	20	1981	3.14
T-L-B-14	65-70	67.5	75.0	23	1978	2.94
T-L-B-16	75-80	77.5	85.5	26	1975	2.96
T-L-B-17	80-85	82.5	100	31	1970	2.68

Table 6-14. Sediment Accumulation, Sediment Age, Year of Deposition, and Sediment Accumulation Rates for Core T-I-A

Core Segment	Segment Depth (cm)	Mean Depth (cm)	Total Dry Sediment Accumulation at Mean Depth (g/cm^2)	Sediment Age (yrs)	Year of Deposition	Sediment Accumulation Rate (cm/yr)
T-I-A-1	0-5	2.50	0.869	1	2000	3.49
T-I-A-2	5-10	7.50	4.53	2	1999	3.17
T-I-A-3	10-15	12.5	10.0	5	1996	2.48
T-I-A-4	15-20	17.5	16.6	8	1993	2.11

Table 6-15. Sediment Accumulation, Sediment Age, Year of Deposition, and Sediment Accumulation Rates for Core T-I-B

Core Segment	Segment Depth (cm)	Mean Depth (cm)	Total Dry Sediment Accumulation at Mean Depth (g/cm^2)	Sediment Age (yrs)	Year of Deposition	Sediment Accumulation Rate (cm/yr)
T-I-B-1	0-5	2.5	1.92	1	2000	3.62
T-I-B-2	5-10	7.5	4.81	2	1999	3.26
T-I-B-3	10-15	12.5	10.6	5	1996	2.56
T-I-B-4	15-20	17.5	18.7	9	1992	2.04

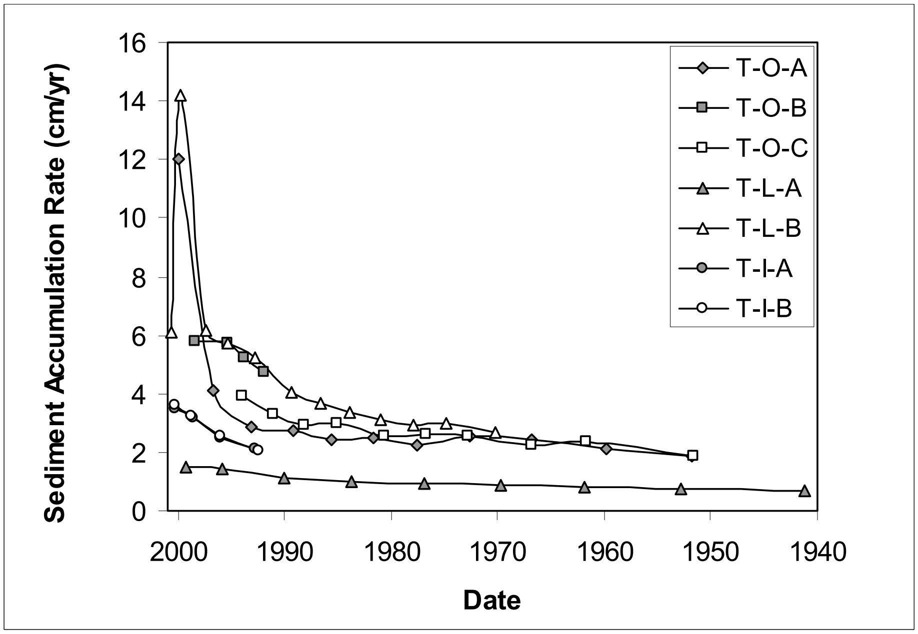

Figure 6-1. Sediment Accumulation Rates for Cores T-O-A, T-O-B, T-O-C, T-L-A, T-L-B, T-I-A, and T-I-B

Table 6-16. Sedimentation Rates for Cores T-O-A, T-O-B, T-O-C, T-L-A, T-L-B, T-I-A, and T-I-B

Core	Sedimentation Rate (g/cm^2-yr)
T-O-A	2.46
T-O-B	5.50
T-O-C	2.73
T-L-A	1.05
T-L-B	3.26
T-I-A	2.02
T-I-B	2.21
Average	2.75 ± 1.39

Table 6-17. Time Required to Achieve 1.0-, 0.4-, and 0.05-mg/kg t-PCB Concentrations in the Upper 5-cm Surface Sediments at Selected Core Locations

Core	Time Required to Achieve 1-mg/kg[(a)] t-PCB (yr)	Time Required to Achieve 0.4-mg/kg[(b)] t-PCB (yr)	Time Required to Achieve 0.05-mg/kg[(c)] t-PCB (yr)
T-L-A	—	—	12-15
T-L-B	2-5	4-7	8-10
T-I-A	2-5	4-7	7-10
T-I-B	3-6	5-9	9-12

(a) ROD surface sediment cleanup goal (U.S. EPA, 1994).
(b) Mean value for site-specific sediment quality criteria calculated using the U.S. EPA's equilibrium partitioning approach (U.S. EPA, 1994).
(c) From NOAA, based on an evaluation of published criteria associated with biological effects on aquatic life (U.S. EPA, 1994).

7.0 COMPARISON OF FIELD RESULTS WITH HISTORICAL DATA FROM LAKE HARTWELL

7.1 Surface Sediment Accumulation

Future PCB fate and transport in the Twelvemile Creek/Lake Hartwell system was modeled to predict the fate and transport of PCBs in the system over a 30-year period (U.S. EPA, 1994). An additional study was done in 2000 by the Engineering Research and Development Center (ERDC) to evaluate the sediment transport processes of Twelvemile Creek and the fate of sediment discharged from flushing and dredging operations at Woodside I and II (ERDC, 2000). The 1994 modeling effort consisted of (1) future sediment transport/deposition using the HEC-6 computer model *Scour and Deposition in Rivers and Reservoirs, Version 4.0*, developed by the Hydraulic Engineering Center of the USACE, (2) future PCB fate and transport using the *Water Quality Analysis Simulation Program (WASP-4), Version 4.0* developed and supported by the U.S. EPA, and (3) future aquatic bioaccumulation modeling using the FGETS model (U.S. EPA, 1994). The 2000 modeling effort only used the HEC-6 computer model to simulate the hydraulic and sedimentation processes during the period of April 1992 through September 1999. The ERDC simulation included information on flushing and dredging events that occurred during the study period (ERDC, 2000). Results of the May 2001 study are compared to the HEC-6 sediment deposition modeling results for both the U.S EPA 1994 and 2000 modeling efforts.

The sediment deposition model assumed that the historic hydrologic flow regime and sediments loading to the system remains unchanged over the 30-year period. Figure 7-1 shows an illustration of expected sediment deposition rates as predicted by the HEC-6 model (U.S. EPA, 1994). The model identified three distinct sediment transport regimes. The uppermost regime (Transects T19 to T16) acted as a river and generated high-energy gradients, bottom shear stresses, turbulence, and high potential for sediment transport, all of which resulted in a small amount of scour in this regime. The second regime (Transects T16 through N; includes Transect O investigated in this study) represented a transition zone from the high-energy fluid environment (river) to a low-energy environment (lake). Energy gradients, bottom shear stresses, and turbulence levels decreased as the transition from the river to lake occurred, resulting in high sediment deposition rates (1.4 to 13.1 cm/yr) and a 30-year accumulation of nearly 10 ft of sediment in some areas. This second regime is strongly influenced by the storage and subsequent release of sediments at the three upgradient impoundments. The third regime (Transects M through T1; includes Transects L and I investigated in this study) behaved as a "natural" impoundment with low-energy gradients and turbulence levels, which favored sediment deposition. However, only small deposition rates were predicted because most of the sediment would be deposited upgradient and only slow-settling, clay-sized particles would be available for downgradient deposition, resulting in modeled deposition rates of 0 to 1.8 cm/yr for a total modeled deposition of 0 to 54 cm over the 30-year period.

Table 7-1 compares HEC-6-predicted and measured sedimentation rates and predicted and measured sediment accumulation over a 10-year period. Because only seven of the cores could be dated, direct comparisons between predicted and measured rates and sediment accumulation could be made only at the transects represented by the dated cores (i.e., T-O-A, T-O-B, T-O-C, T-L-A, T-L-B, T-I-A, and T-I-B).

The comparison of sediment accumulation predicted by the ROD (U.S. EPA, 1994) and measured as part of this study must be made on the basis of predicted and measured sediment accumulation over a finite time period (in this case, 10 years), instead of on the basis of predicted and measured sediment accumulation rates. An obvious difficulty in comparing the sediment accumulation rates reported in the ROD, based on HEC-6 modeling results, with those reported in this study is that the two sediment accumulation measurements do not represent the same physical trend. The values reported in the ROD

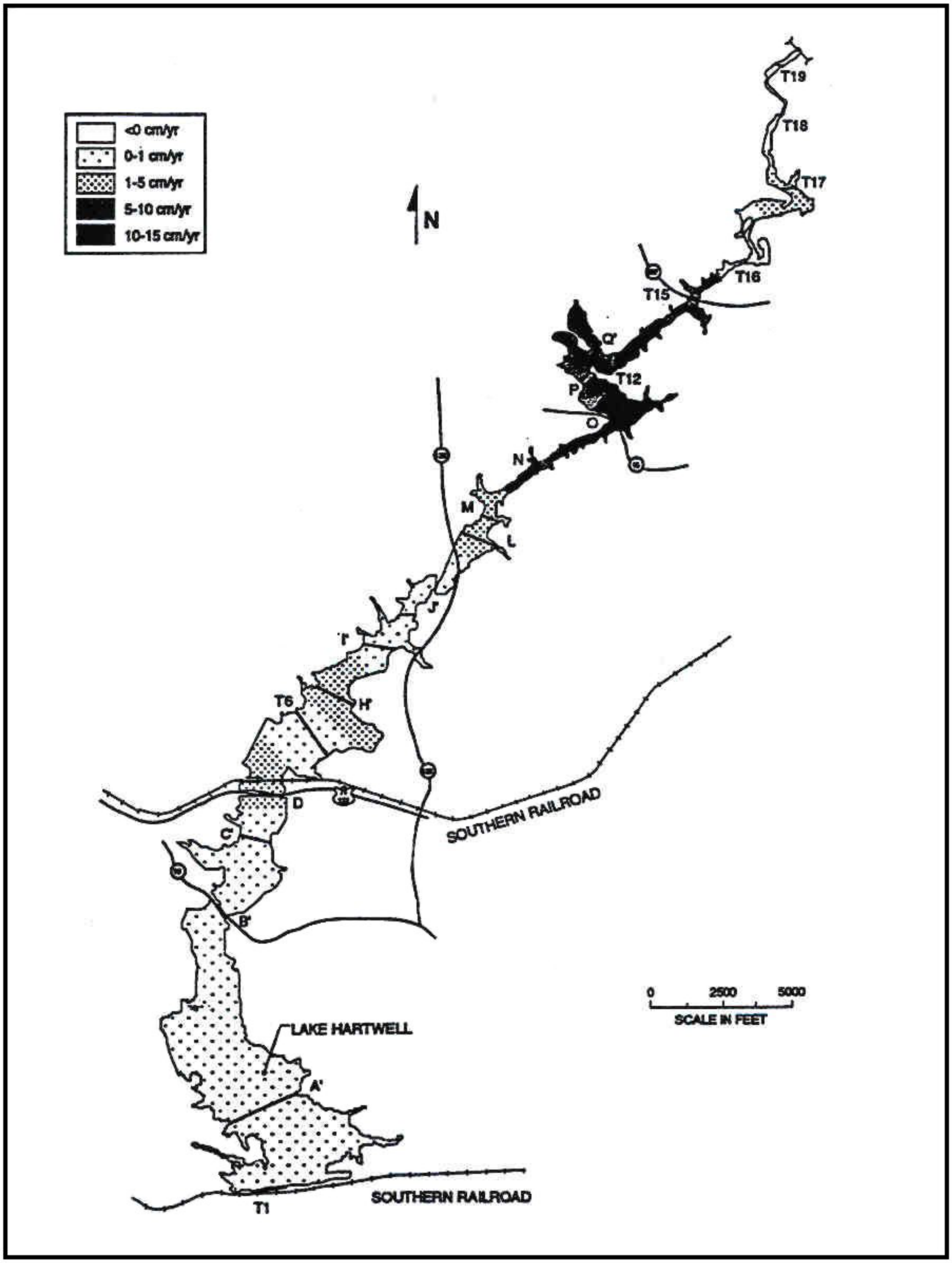

Figure 7-1. Predicted Average Sediment Burial Rates in Lake Hartwell (Source: U.S. EPA, 1994)

Table 7-1. Comparison of Predicted (U.S. EPA, 1994) and Measured Sediment Accumulation and Sediment Accumulation Rates at Transects Investigated in This Study

Transect (Core Location)	Sedimentation Accumulation Rates (cm/yr)				10-Year Sediment Accumulation (cm)		Comments
	HEC-6 Predicted	Measured Rates at Various Depth Intervals [(a)]			HEC-6 Predicted	Measured	
		Surface	Mid-depth	Deep			
T-O-A	5-10	—	12.0 (17.5)	1.88 (97.5)	50-100	20-30	HEC-6 overestimated sediment accumulation
T-O-B	5-10	5.77 (15.0)	5.70 (32.5)	4.72 (42.5)	50-100	>50	HEC-6 accurately estimated sediment accumulation
T-O-C	5-10	22.4 (22.5)	2.98 (47.5)	2.27 (77.5)	50-100	20-30	HEC-6 overestimated sediment accumulation
T-L-A	1-5	1.25 (2.5)	0.94 (22.5)	0.71 (42.5)	10-50	10-15	HEC-6 accurately estimated sediment accumulation
T-L-B	1-5	6.09 (2.5)	3.67 (52.5)	2.68 (97.5)	10-50	30-35	HEC-6 accurately estimated sediment accumulation
T-L-C	1-5		—		10-50	—	—
T-I-A	0-1	3.49 (2.5)	2.48 (12.5)	2.11 (17.5)	≤ 10	>16	HEC-6 underestimated sediment accumulation
T-I-B	0-1	3.62 (2.5)	2.56 (12.5)	2.04 (17.5)	≤ 10	>18	HEC-6 underestimated sediment accumulation

(a) The mid-depths of the sediment intervals are reported in (parentheses) for the measured sediment accumulation rates reported in this table.

— Indicates that sediment accumulation and accumulation rates could not be measured.

represent average sediment accumulation rate values and do not distinguish between compacted and uncompacted sediment. In contrast, careful evaluation of the results presented in Section 6.0 (Tables 6-9 through 6-15) reveals that sediment accumulation rates decrease with increasing sediment depth due to sediment compaction and the loss of water from sediment pore space. For example, if the 22.5-cm/yr surface-sediment-accumulation rate for Core T-O-C were used as the sediment accumulation rate, a 10-year accumulation of 225 cm of sediment would be predicted. However, sediment accumulation rates in the deepest portions of T-O-C are only approximately 2 cm/yr, and coring results and age dating reveal a 10-year accumulation of only 35-40 cm between approximately 1990 and 2000, the difference being due to sediment compaction. For this reason, Table 7-1 compares the predicted and measured 10-year accumulation of sediments in T-O-A, T-O-B, T-O-C, T-L-A, T-L-B, T-I-A, and T-I-B and the predicted and measured sediment accumulation rates for these cores.

The predicted 10-year accumulation values were determined by multiplying the ROD-reported sediment accumulation rates by 10. The measured accumulation rates were determined by using the measured core depth over an approximate 10-year period between 1990 and 2000 based on the results reported in Tables 6-9 through 6-15. ROD-predicted sedimentation rates are based on those shown in Figure 7-1, as reported in the ROD (U.S. EPA, 1994). Measured rates are based on reported rates for surface, mid-depth, and deep sediment layers in Tables 6-9 through 6-15.

The HEC-6 model overpredicted sediment accumulation rates in the Transect O cores by a factor of approximately three times and underpredicted rates in Transect I cores. Transect L was the only transect that had a model-estimated sediment accumulation rate closely matching the measured rate. These results were similar to what was found in the previous study at Lake Hartwell (Battelle, 2001b).

7.2 Time to Achieve Sediment Cleanup Goals

Results from the WASP4 simulations indicated that clean sediment from the upgradient tributary is deposited over the contaminated sediments, resulting in the burial and dilution of the contaminated sediments over time (U.S. EPA, 1994). The net results of the transport processes are (1) a reduction in surface-sediment and bed-sediment PCB concentrations in the upper and middle portions of the system, and (2) an increase in surface-sediment and bed-sediment PCB concentrations near the lower end of the system.

The results of this study predict that the 1-mg/kg sediment cleanup goal will be achieved within 6 years, the 0.4-mg/kg goal within 15 years, and the 0.05-mg/kg goal within 25 years (Tables 3-6 and 6-17). These results are based on the assumption that the PCB source has been depleted and that clean sediment is deposited in Lake Hartwell. These results suggest that Lake Hartwell will meet the treatment goals established in the ROD (U.S. EPA, 1994) within 6 years and that sediment recovery will continue over the next three decades.

7.3 Storm Event Summary

A search was done of NOAA's database, accessible via their Web page (www.ncdc.noaa.gov), for storm or weather events that would affect the counties encompassing Lake Hartwell. Lake Hartwell is contained within three counties in South Carolina: Anderson, Oconee, and Pickens (Figure 7-2). The NOAA database records storm events from 1993 to the present, and information is updated on a daily

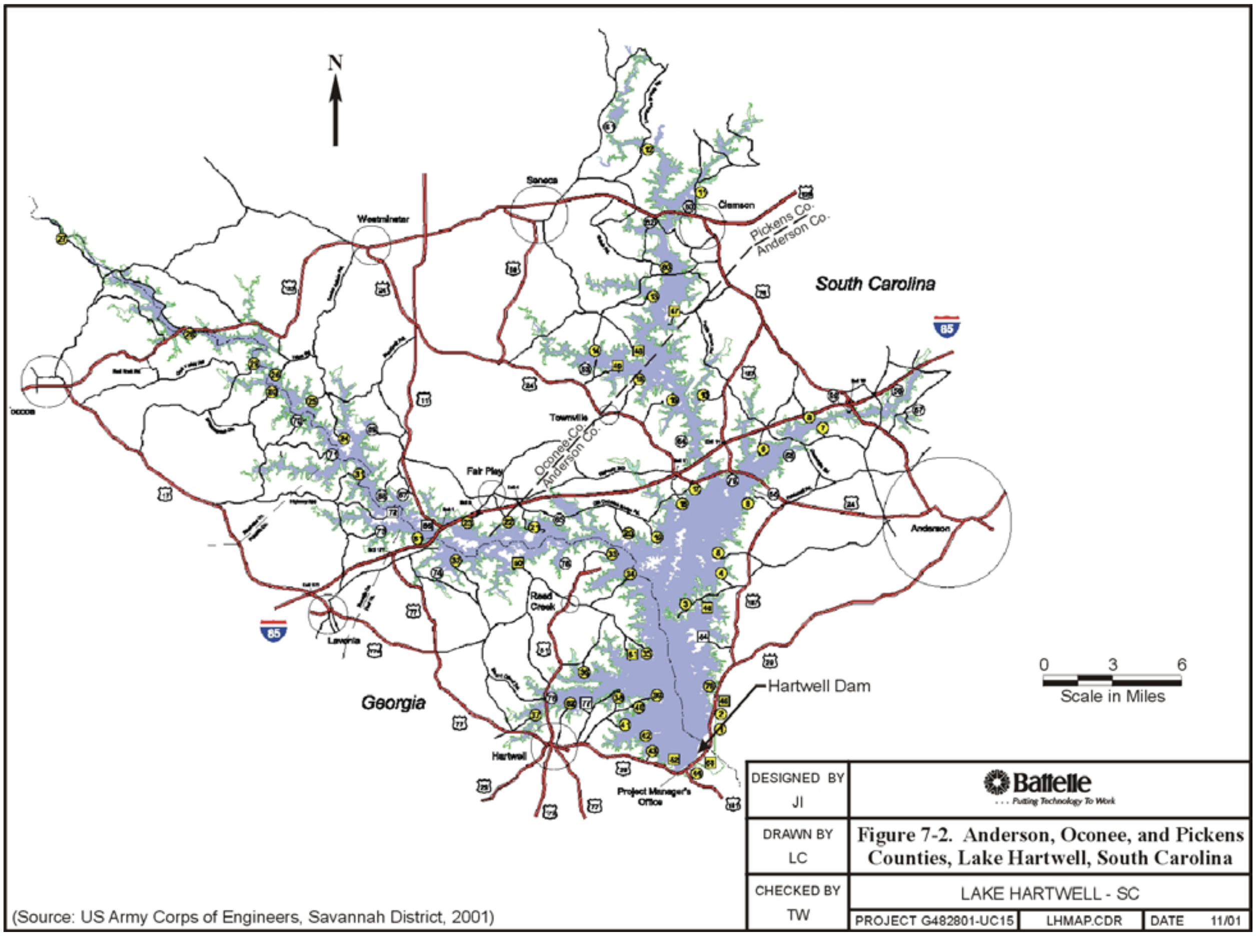

Figure 7-2. Anderson, Oconee, and Pickens Counties in the Lake Hartwell Area

basis. Three categories of events were selected for this historical review: tropical storms/hurricanes, floods/flash floods, and droughts. A search was also done of the National Hurricane Center's (NHC's) storm tracking database for tropical storms, tropical depressions, and hurricanes (www.nhc.noaa.gov). This web page allows visual tracking of major storms originating in the Atlantic Ocean and the Gulf of Mexico dating back to 1927.

NOAA's database reported 20 hurricanes or tropical storm events in South Carolina between January 1993 and April 2001. Only one of these storms, Tropical Storm Jerry, was reported as affecting the counties close to Lake Hartwell. Tropical Storm Jerry hit South Carolina near August 28, 1995, and moved eastward across the state. Rainfall in most areas varied from 8 to more than 12 inches and produced flooding in some areas; a peak in water inflow to Lake Hartwell was observed on August 26, 1995 (Table 7-2). Property damage from Jerry was estimated to be $10 million statewide.

From NOAA's visual tracking Web page, eight other high-energy storms were identified as potentially affecting the Lake Hartwell area (Table 7-2). This table lists nine high-energy storms, including Tropical Storm Jerry, and changes in flows into Lake Hartwell as a result of the storms. There were several other dates in the records where inflow increased dramatically, but no storm event could be matched with those dates, suggesting that even normal rainfall can cause dramatic flow increases into Lake Hartwell.

Table 7-2. Tropical Depressions, Tropical Storms, and Hurricanes Affecting Lake Hartwell Between 1927 and Present

Event[(a)]	Storm Name[(a)]	Date[(a)]	Change in Lake Inflow (cfs)[(b)]
Tropical Depression	Cleo	August 30, 1964	Increase from 7,468 to 16,313
Tropical Depression	Abby	June 8, 1968	Increase from 9,001 to 12,906
Tropical Depression	Babe	September 3-8, 1977	Increase from 7,309 to 18,797
Tropical Depression	David	August 25-September 7, 1979	No difference observed
Hurricane	Hugo	September 22, 1989	No difference observed
Extratropical Depression	Marco	October 9-13, 1990	No difference observed
Extratropical Depression	Allison	June 3-6, 1995	No difference observed
Tropical Storm	Jerry	August 28, 1995	Increased from 5,199 to 21,175, then increased again to 47,004
Tropical Storm	Danny	July 16-26, 1997	No difference observed

(a) Data from www.ncdc.noaa.gov and www.nhc.noaa.gov/pastall.html.
(b) Based on flow records for Lake Hartwell. Data from http://water.sas.usace.army.mil/hartwell.
cfs = cubic feet per second
Extratropical depression = a tropical cyclone in the middle and high latitudes, often 2,000 km in diameter and usually containing a cold front that extends toward the equator for hundreds of km.
Hurricane = a tropical cyclone with winds exceeding 66 knots, generally accompanied by rain, thunder, and lightning.
Tropical depression = a tropical cyclone with winds equal to or less than 27 knots.
Tropical storm = a tropical cyclone with winds stronger than 27 knots, but less than 66 knots.

A total of 11 floods or flash floods were reported in counties surrounding Lake Hartwell during the 8-year span from January 1993 to April 2001. Of these 11 events, only seven had a description of the event beyond the date and county or counties affected. The 11 events are listed in Table 7-3 along with the change in flow into Lake Hartwell observed on those dates. Information on total inflow for Lake Hartwell was found on the USACE Lake Hartwell Web site (http://water.sas.usace.army.mil/hartwell).

Recent long-term droughts in South Carolina have greatly decreased the water levels in Lake Hartwell. On August 31, 1993, South Carolina was declared a drought disaster area by the U.S. Department of Agriculture after the driest summer season on record for the area. Two (2) years later in May of 1995, low rainfall levels again caused drought conditions, which led to extensive crop damage. In June 1998, the areas surrounding Lake Hartwell began to see decreased rainfall levels that continued through this study. During this latest drought period, area lakes reached record low levels causing property damage to boats, docks, and recreational areas. Several communities in 12 counties initiated water control measures because of the severe drought conditions. By spring 2001, the long-term drought had become more severe and water levels in lakes dropped and stream flow into lakes reached record lows. Figure 7-3 shows Lake Hartwell water levels for 1990 to the present. Water levels in January 2001 were the lowest observed over the last decade. The seasonal nature of the water level in Lake Hartwell is the result of intentional releases from Hartwell Dam in the winter months to create storage capacity for spring rainfall. However, the downward trend in annual high and low levels starting in 1999 is apparent.

Table 7-3. Floods Affecting Water Inflow to Lake Hartwell Between 1993 and 2002

County[a]	Date[a]	Event[a]	Damage[a]	Rainfall Total[a]	Change in Lake Inflow (cfs)[b]
Pickens	March 23, 1993	Flash Flood	N/A	N/A	Increased from 5,842 to 16,744
Greenville	May 4, 1993	Flash Flood	N/A	N/A	Increased from 4,708 to 16,628
Anderson	August 17, 1994	Flood	>$1 million in property damage.	4 to 5 in. (>12 in. in the mountains)	Increased from 8,527 to 47,432 on Aug. 16, increased to 101,335 on Aug. 17
Statewide	October 13, 1994	Flash Flood	N/A	N/A	Increased from 8,758 to 12,224
Pickens	February 16, 1995	Flash Flood	N/A	N/A	Increased from 6,340 to 30,926
Oconee	October 5, 1995	Flash Flood	Closed roads and bridges.	4 to 6 in.	Increased from 7,707 to 27,991
Anderson	May 25, 1996	Flash Flood	Bridge washed out in Anderson.	N/A	Increased from 2,788 to 10,216
Pickens	October 26, 1997	Flood	Flooded some bridges and roads, numerous traffic accidents from standing water and heavy rain.	N/A	Increased from 3,631 to 39,241
Pickens	January 7, 1998	Flash Flood	Washed out a road, F2 tornado touched down near Easley.	4 to 7 in.	Increased from 3,670 to 42,751
Anderson	April 17, 1998	Flash Flood	The Little River in downtown Laurens rose to its highest level since the flood control project of the mid-1970s.	N/A	Increased from 8,249 to 44,595
Anderson	October 11, 1999	Flood	Whitner Creek flooded the downtown district of Anderson.	N/A	Increased from 750 to 18,374

cfs = cubic feet per second.
N/A = not available.
(a) Data on flash floods from www.ncdc.noaa.gov.
(b) Based on flow records for Lake Hartwell from http://water.sas.usace.army.mil/hartwell.

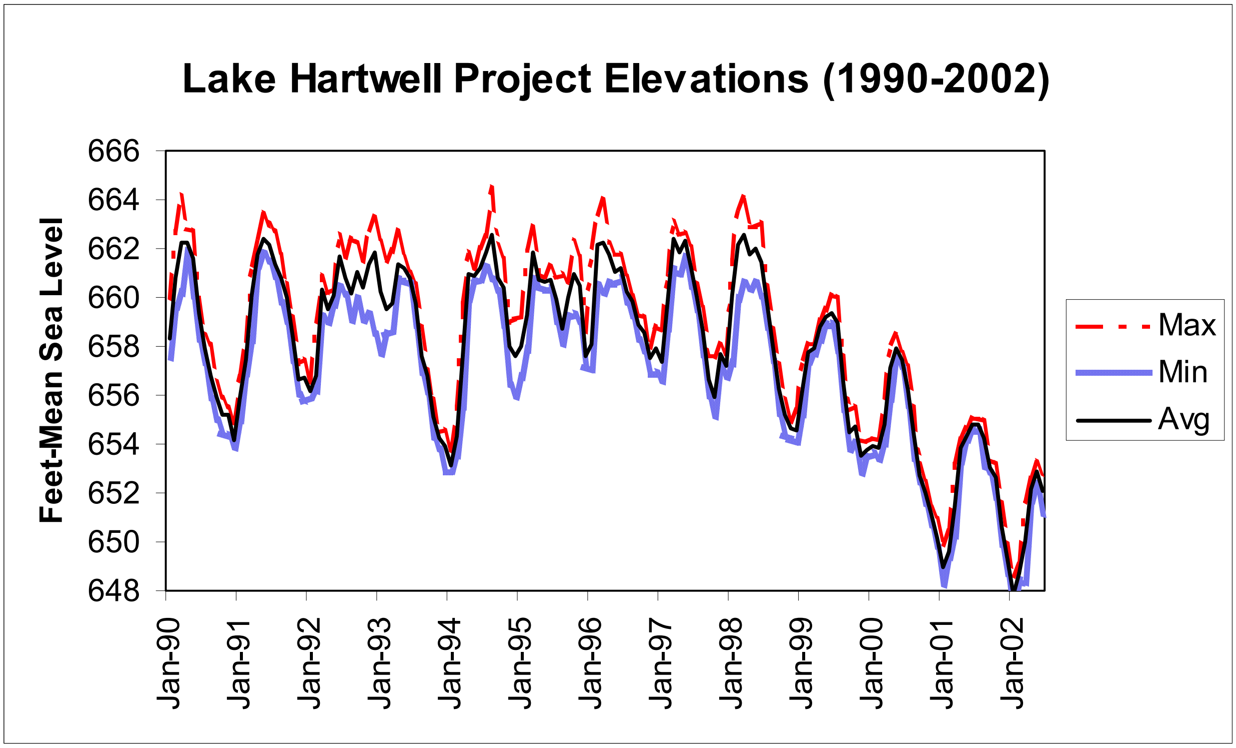

Figure 7-3. Lake Hartwell Water Elevations 1990 to 2002
(http://water.sas.usace.army.mil/hartwell)

Storm data also were obtained from the South Carolina State Climatology Office, which compiles a report on the maximum rainfall intensity by county for South Carolina (www.dnr.state.sc.us/climate). Table 7-4 gives information on the amount of rainfall required for a storm to be designated a 25-, 50-, or 100-yr storm for Anderson, Oconee, and Pickens Counties. Daily rainfall totals for Anderson, Oconee, and Pickens counties were obtained from the Climate Interactive Rapid Retrieval Users System (CIRRUS) provided by the Southeast Regional Climate Center (SERCC) (NOAA rainfall data not available on Web). Data well provided by CIRRUS for the States of Alabama, Florida, Georgia, North Carolina, and South Carolina and the Commonwealths of Virginia, Puerto Rico, and the U.S. Virgin Islands (SERCC, 2001). These data are from automated climate stations maintained by the U.S. Geological Survey, U.S. National Park Service, and U.S. Forest Service and other agencies of the U.S. Department of Agriculture. The 24-hr rainfall totals from all climate stations within a county (Table 7-5) were reviewed and compared to the rainfall required for a 25-, 50-, and 100-yr storm. Six storms were identified that had enough rainfall to be classified as a 25- to 100-yr storm events (Table 7-6). All six of these storms occurred at only one station in one county, which means these were concentrated storms that affected a small area. Two of these storms could be matched with other weather events in the area. The 50-yr storm in Oconee County on August 17, 1994 also was listed on NOAA's Web page as a flood in Anderson County (Table 7-3), but the rainfall totals in Anderson County on this date were not great enough to be placed in the 25- to 100-yr storm category. The 100-yr storm in Anderson County on August 27, 1995 coincided with Tropical Storm Jerry.

Lake Hartwell Dam inflow and outflow measurements are presented in Figure 7-4. Storm events, which caused increased discharge from the dam, are labeled in Figure 7-4. This figure shows that some large storm events in Anderson, Oconee, and Pickens Counties caused increases in flow both into and out

Table 7-4. Rainfall Intensity in Inches at the Center of Each County Required for 25-, 50-, or 100-yr Storms

Storm Event	Rainfall Duration							
	5 min	10 min	15 min	30 min	60 min	6 hr	12 hr	24 hr
Anderson County								
25-yr	N/A	N/A	N/A	2.15	2.75	4.9	5.8	6.75
50-yr	N/A	N/A	N/A	2.37	3.04	5.5	6.5	7.4
100-yr	0.831	N/A	1.78	2.65	3.9	5.9	7.0	8.0
Oconee County								
25-yr	0.697	N/A	N/A	2.12	2.72	5.0	6.5	8.0
50-yr	0.758	N/A	N/A	2.35	3.0	6.0	7.3	9.0
100-yr	0.832	N/A	1.79	2.59	3.98	6.25	8.2	9.8
Pickens County								
25-yr	N/A	N/A	N/A	2.11	2.69	5.1	6.9	8.0
50-yr	N/A	N/A	N/A	2.32	2.97	6.0	7.4	8.9
100-yr	0.821	N/A	1.8	2.59	3.98	6.25	8.0	9.6

N/A = not available.

Table 7-5. Climate Stations for Anderson, Oconee, and Pickens Counties Maintained by the South Carolina Climatology Office

Station ID	Station Name	Data Begin Date	Data End Date
Anderson County			
17253 (380165)	Anderson, SC	July 1, 1948	October 29, 2001[(a)]
17254 (380170)	Anderson FAA Airport, SC	August 1, 1948	October 29, 2001 [(a)]
17262 (380613)	Belton 7 NNE, SC	January 1, 1998	October 23, 2001
17395 (386783)	Pelzer, SC	July 1, 1948	June 30, 1965
17422 (387687)	Sandy Springs 2 NE, SC	January 1, 1998	October 29, 2001 [(a)]
17457 (389122)	West Pelzer, SC	July 1, 1965	October 29, 2001 [(a)]
Oconee County			
17348 (384581)	Jocassee 8 WNW, SC	August 1, 1948	September 24, 2001
17362 (385278)	Longcreek, SC	July 1, 1948	October 28, 2001
17383 (386423)	Oakway, SC	January 7, 1952	January 31, 1990
17419 (387589)	Salem 5 NNE, SC	January 7, 1952	October 29, 2001 [(a)]
17450 (388887)	Walhalla, SC	July 1, 1948	October 29, 2001 [(a)]
Pickens County			
17291 (381770)	Clemson University, SC	January 1, 1930	October 29, 2001 [(a)]
17398 (386831)	Pickens, SC	August 1, 1951	October 29, 2001 [(a)]
17399 (386836)	Pickens 2 N, SC	July 1, 1956	July 31, 1964
17400 (386839)	Pickens 2 SE, SC	July 1, 1956	July 31, 1964
17404 (386851)	Pickens 4 SSW, SC	July 1, 1956	July 31, 1964
17403 (386848)	Pickens 5 E, SC	July 1, 1956	July 31, 1964
17402 (386845)	Pickens 5 WNW, SC	July 1, 1956	July 31, 1964
17401 (386842)	Pickens 6 WSW, SC	July 1, 1956	July 31, 1964

(a) Date information was collected for this study; the stations are still operational.

Table 7-6. 25-, 50-, and 100-yr Storm Events and Rainfall Totals Over a 24-hr Period by County

Station Name	Storm Event	Storm Date	24 hr Rainfall Total (inches)
Anderson County			
Anderson FAA Airport, SC	25-yr	July 18, 1964	6.94
West Pelzer[(a)]	100-yr	August 27, 1995	12.81
Oconee			
Jocassee 8 WNW[(b)]	50-yr	August 17,1994	9.21
Longcreek	50-yr	March 9, 1998	9.50
Pickens			
Clemson University	100-yr	September 30, 1936	9.92
Pickens 2N	25-yr	August 31, 1961	8.60

(a) Coincides with Tropical Storm Jerry (see Table 7-2).
(b) Also listed by NOAA as a flood event (see Table 7-3).
Source: Rainfall data from CIRRUS provided by the SERCC.

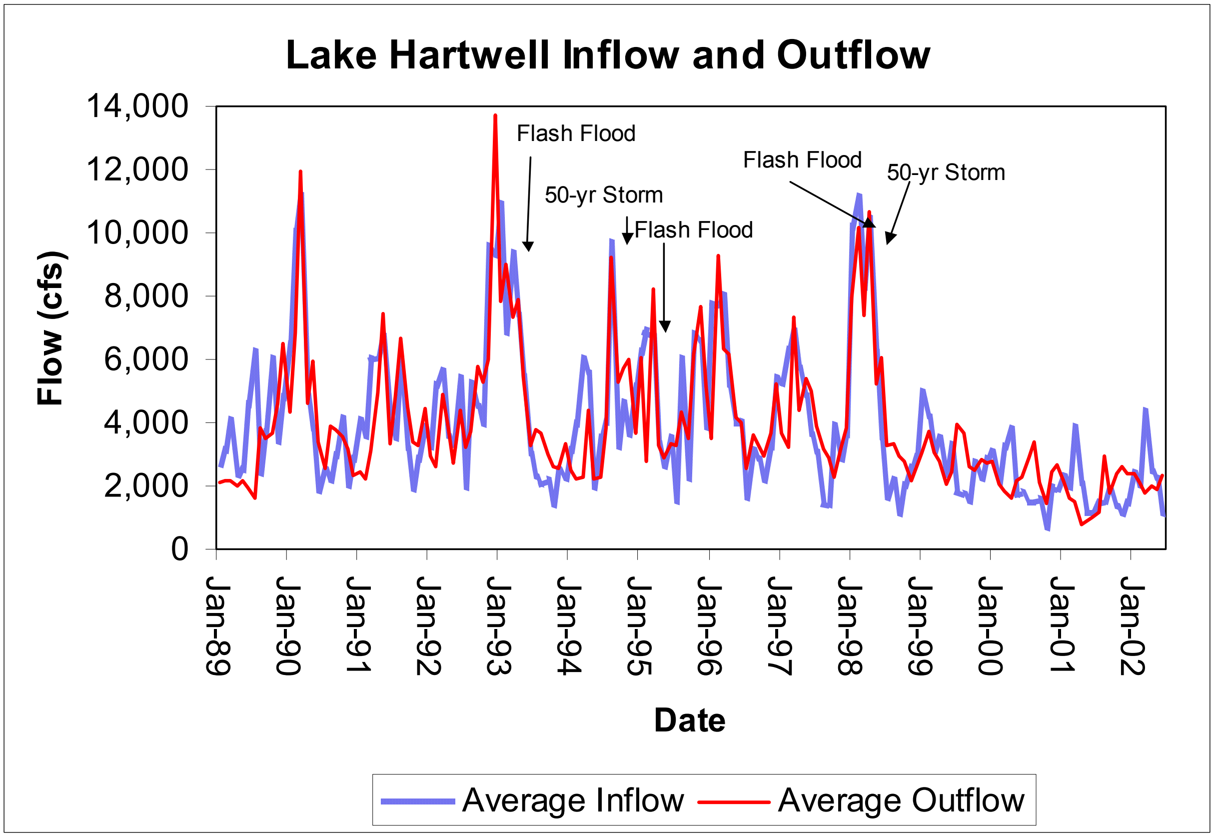

Figure 7-4. Average Inflow and Outflow for Lake Hartwell Dam 1989 to 2002
(Data from USACE Lake Hartwell Web site, http://water.sas.usace.army.mil.hartwell.)

of Lake Hartwell Dam, but most storm events did not cause an increase in flow. There are also a number of peaks in the flow through the dam that are not related to large storm events but that are the result of intentional releases for power generation or to lower the lake level to increase storage capacity.

Extreme mixing from a major storm event would cause uniform concentrations in the t-PCB depth concentration profiles. Concentration profiles for cores taken during the previous study at Lake Hartwell (Battelle, 2001b) and the profiles for the cores in the present study were examined for signs of mixing throughout the cores. All cores except N and J in the previous study exhibited a steady increase in t-PCB concentration in the first 20 cm of each core, indicating that mixing was not likely. The t-PCB concentrations in Core J were inconclusive for mixing because the core was shallow (0-27 cm) and the concentrations were all less than 1.5 mg/kg. Concentrations in the first 20 cm of Core N varied slightly, but concentrations at 20 cm more than doubled.

Signs of substantial mixing were not evident in Cores T-I-A, T-I-B, T-L-A, T-L-B, and T-L-C. Cores T-O-A and T-O-B suggest possible signs of mixing in the top 30 cm of each core, but the concentrations in these portions of the cores were relatively low. Variations in the concentrations of deposited material during recent years at these locations may have impacted concentrations observed in the cores. If mixing did occur in Twelvemile Creek, it did not appear to reach the highest PCB concentrations.

It would take a huge storm event to cause the top 30 cm of sediments to be lifted in order for the highly contaminated sediments to be exposed and move downstream. It appears, that short of dam failure, no other scenario is catastrophic enough to expose the deep sediments.

The recent drought in the southeast, which included Lake Hartwell and surrounding counties, may have led to additional sediment mixing. The drought reduced water levels in the lake, thereby potentially exposing contaminated sediments that then could have sloughed into the lakewater from the banks for the lake. It is unclear whether this affected some of the relatively flat surface sediment profiles collected in 2001.

8.0 CONCLUSIONS

The primary goal of this study was to achieve a better understanding of the natural mechanisms that contribute to the recovery of PCB-contaminated sediments at Lake Hartwell. During a previously reported FY00 study (WA 4-30), sediment cores were collected from 10 Lake Hartwell transect locations identified in the U.S. EPA ROD. The transect locations were Transects T16, W7, Q, P, O, N, L, J, I, and T6. For the FY01 work presented in this report, a total of eight additional sediment cores were collected at three transect locations: three cores were collected from T-O, three from T-L, and two from T-I. The cores were collected from shore to shore at each transect where possible. The purpose of collecting these additional cores was to better understand the historical deposition of PCBs and their historical dechlorination from shore to shore of the Lake. This information provided a three-dimensional portrait of the site, as opposed to the previous two-dimensional understanding of the site (i.e., vertical profiles along the centerline of the lake).

Additionally, 21 surface sediment samples and 9 high-volume water samples were collected from Lake Hartwell and from near the former Sangamo-Weston Plant. The purpose of the surface sediment and high-volume water sampling was to identify and characterize the source of low-level PCBs entering the lake.

Cores were subdivided into 5-cm segments and analyzed for ^{210}Pb, ^{137}Cs, PCBs, TOC, and PSD. Sediment ^{210}Pb and ^{137}Cs analyses were conducted to age date sediments and to determine sediment accumulation rates (cm/yr) and sedimentation rates (g/cm^2-yr). Detailed PCB congener analyses were conducted on the 107 individual PCB congeners quantified by gas chromatography/mass spectrometry (GC/MS) analysis to identify vertical and lateral congener profiles and trends.

8.1 PCB Concentration Profiles

Total PCB concentrations were determined by summing the congener-specific concentrations for each core segment. Biphenyl also was measured in the sediments. Because biphenyl is not a PCB, biphenyl concentrations were not included in the t-PCB concentrations.

8.1.1 Sediment Core Profiles. Transects O, L, and I were not noticeably impacted by the surface deposition of clean sediments from the upgradient impoundments, a phenomenon that was observed in earlier investigations and thought to result from sediment releases from the upgradient impoundments. However, unlike the previous investigation, sand layers were found intermittently in some cores at T-O, T-L, and T-I and at deeper locations within the profile. As expected, the highest concentrations of PCBs were associated with the silt and clay layers, whereas the sand layers contained very low PCB concentrations. In some cases, this stratification effect had some impact on the inverted bell-shaped data trend observed in most typical vertical t-PCB profiles. The sand layers also confounded the age dating analysis, making it impossible to date some cores, or making it possible only to date portions of a core.

8.1.2 Surface Sediment Profiles. Three of the surface sediment sample locations were collected upstream from the Sangamo-Weston Plant and may represent background samples (C-0, C-2, and C-4). All of the samples from these three locations had low t-PCB concentrations ranging from below detection limits to 12.5 µg/kg. Samples collected at C-1, located directly downstream from the Sangamo-Weston Plant, had the highest PCB concentrations of the surface sediment samples. Moving downstream from the Sangamo-Weston plant, the t-PCB concentration decreased at C-3 to 23 and 61 µg/kg, then increased again at C-5 to 215 and 631 µg/kg and decreased again at C-6 to 3.84 and 147 µg/kg. The *Corbicula* clam t-PCB concentrations (Shlumberger, 2002) appear to correspond to the surface sediment t-PCB concentrations with the lowest t-PCB levels at locations C-0, C-2, and C-4 and the highest concentrations at C-1.

8.1.3 High-Volume Water Concentration Profiles. The results from the water PCB analyses revealed that particles greater than 0.7 µm were being captured on the primary filter and that those particles contained low levels of adsorbed PCBs. The accumulation of PCBs on the secondary (Empore™) filter is representative of soluble PCBs or PCBs adsorbed to particles less than 0.7 µm in size. For each sample, the majority of the mass was associated with the PCB fraction captured by the Empore™ filters.

Qualitatively, the PCB results follow the trend that one might expect when viewing the proximity of each sample location to the former PCB source. The highest concentration of t-PCB in water was observed at location C-0, which is slightly upstream of the plant on Town Creek. Location C-1, which is downgradient of the plant on Town Creek, also exhibited a relatively high concentration of t-PCB. Location C-2, which is located on Twelvemile Creek, upstream from the point where Town Creek and Twelvemile Creek join, had a relatively low concentration of t-PCB (3.88 ng/L) as would be expected. At sample location C-3, which is further downstream on Twelvemile Creek, the t-PCB concentration was 48.8 ng/L, relatively the same concentration observed at C-1. There was no detectable PCB concentration observed at C-4, which is downgradient from the plant, but located on Wolf Creek (a tributary to Twelvemile Creek), just upstream from where Wolf Creek joins with Twelvemile Creek. Samples C-5 and C-6 were collected further downstream on Twelvemile Creek and produced t-PCB concentrations of 6.83 and 69.3 ng/L, respectively. Even further downstream on Twelvemile Creek, samples collected at T-O and T-L resulted in t-PCB concentrations of 15.4 and 22.3 ng/L, respectively.

8.2 PCB Compositional Changes

The PCB composition (i.e., the relative concentrations of PCB congeners) was evaluated for each sample, in addition to the assessment of t-PCB concentrations. The composition was studied based on PCB homologue (i.e., level of chlorination) data and detailed PCB congener data. The PCB composition of the field samples was studied to determine characteristic relationships attributable to factors such as the sampling location in the river (horizontal profile), sample depth (vertical profile), and the age of the sample determined through age dating. The PCB compositions were compared to known Aroclor formulations to examine the extent of PCB weathering and, if possible, to identify the source of contamination. However, direct comparison with Aroclor formulations was recognized to be of limited value, considering the significant age of most of the measured contaminants and the associated weathering and other transformation mechanisms that appear to have affected the PCB composition of the samples.

8.2.1 Core PCB Composition by Homologue Distribution (Level of Chlorination). The relative concentrations of the PCB homologues shifted towards the less chlorinated congeners with sediment depth and corresponding age of the deposited sediments.

8.2.2 Congener Profiles in Surface Sediments. Both samples collected at C-4 contained only biphenyls at low concentrations. Samples collected at C-0, upstream of the Sangamo-Weston Plant, were dominated mostly by tetrachlorobiphenyls and pentachlorobiphenyls, but also had significant percentages of trichlorobiphenyls and hexachlorobiphenyls. Samples collected at C-2 were dominated by tetrachlorobiphenyls.

At location C-1, three of the four surface sediment samples (C-1A, C-1B, and C-1C) had very similar PCB homologue distributions; each of these samples was dominated by trichlorobiphenyls, then by tetrachlorobiphenyls. Sample C-1D was comprised mostly of tetrachlorobiphenyls. C-1D also had the lowest t-PCB concentration of the four C-1 samples.

All four samples collected at C-3 had similar PCB homologue distributions (tetrachlorobiphenyls and pentachlorobiphenyls dominant) despite the differences in depth and t-PCB concentrations. Samples at C-5 also had similar distributions with tetrachlorobiphenyls and pentachlorobiphenyls dominating.

The two surface samples taken at C-6 (C-6A and C-6B) had similar homologue distributions despite a large difference in t-PCB concentration. These two samples were comprised mostly of tetrachlorobiphenyls. Three of the samples collected at C-6 were taken at deeper depths: C-6D-1 (5-12 cm), C-6D-2 (20-27 cm) and C-6C-1 (40-52 cm). The level of chlorination in these samples appeared to decrease with increasing depth. This pattern suggests some dechlorination with increasing depth in the cores collected near C-6.

8.3 PCB Composition by Congener Distribution for Sediment Cores

Comparison of the distribution of all measured PCB congeners (i.e., not just homologues) can provide a more detailed comparison of PCB distributions in surface and buried sediments. The PCB congener composition became increasingly dominated by lower-chlorinated congeners with sediment depth and corresponding age of the deposited sediments, which is consistent with changes observed in the homologue distribution profiles for the other core samples. A significant loss of tetra- (18%), penta- (23%), and hexachlorobiphenyl (14%) congeners occurred at depth (35-40 cm); however, mono- (8.3%), di- (36%), and trichlorobiphenyls (16%) accumulated.

Examination of a core from Transect L showed that the shift from higher- to lower-chlorinated congeners resulted in the accumulation of primarily *ortho*-chlorinated biphenyls, particularly 2,2′- and 2,6-dichlorobiphenyls, both of which have chlorines only in *ortho* positions; these two congeners resulted in a combined 32% increase. The predominant trichlorobiphenyl to accumulate at depth also was an *ortho*-chlorinated biphenyl, with chlorines in the 2, 2′, and 6 positions (PCB 19). The only monochlorobiphenyl congener to have had a measurable increase was 2-chlorobiphenyl (PCB 1), also an *ortho*-chlorinated congener.

PCB congeners 66, 70/76, and 74 were of the most significant tetrachlorobiphenyl congeners resulting in decreases. Of the pentachlorobiphenyls, congeners 95, 110, and 118 accounted for most of the decreases at 35-40 cm. PCB congeners 138/160/163 and 153 were hexachlorobiphenyls that resulted in the most decrease at this depth, with changes of 4.0% and 2.4%, respectively.

The PCB congener compositional analysis revealed the same horizontal characteristics as the PCB homologue data; the upgradient locations had distributions and trends that were similar to the downgradient locations. The sediments close to the surface had a PCB congener distribution centered around higher-molecular-weight tetrachlorobiphenyls (approximately around PCB 66), but with significant contributions of key congeners ranging from di- through hexachlorobiphenyls. Major congeners (each generally comprising between 2% and 6% of the t-PCBs) included the dichlorobiphenyl PCB 4/10; the trichlorobiphenyls PCB 16/32 and PCB 19; the tetrachlorobiphenyls PCB 41, PCB 47, PCB 49, PCB 52, PCB 66, and PCB 70/76; the pentachlorobiphenyls PCB 95, PCB 101/90, PCB 110, and PCB 118; and the hexachlorobiphenyls PCB 138/160/163, PCB 149, and PCB 153.

8.4 Polytopic Vector Analysis of Lake Hartwell PCB Distribution

The PCB data generated for this study were modeled using the multivariate statistical method known as polytopic vector analysis. PVA is a valuable tool for chemical fingerprinting in complex multisource/multiprocess environmental systems. For this study, PVA was conducted to identify fingerprint (also known as end-member) compositions from the data generated for Lake Hartwell and to compare the end members with literature-reported source patterns (e.g., Aroclor compositions and known

PCB dechlorination or weathering patterns). Dr. Glenn W. Johnson (Energy & Geoscience Institute, Department of Civil and Environmental Engineering, University of Utah) assisted with this analysis. Data analysis methods were conducted as outlined by Johnson et al. (2000; 2002).

PVA resolved four end-member patterns. Interpretation of end-member patterns was accomplished by comparison to reference data sets, including: (1) Aroclor compositions provided by Battelle; (2) Aroclor compositions reported by Frame et al. (1996); and (3) PCB patterns resulting from environmental fate processes such as dechlorination and volatilization (Chiarenzelli et al., 1997; Johnson and Chiarenzelli, 2000; Bedard and Quensen, 1995; Johnson and Quensen, 2000). The chemical composition, geographic/temporal distribution, and interpretations for each end-member fingerprint (EM-1, EM-2, EM-3, and EM-4) are discussed below.

The composition and distribution of End-Member 1 for the 2001 data are nearly identical to the EM-1 patterns resolved in the 2000 model, and is consistent with a mixture of Aroclors 1248 and 1254. Given that Sangamo-Weston used Aroclor 1242 but not 1248, the source of 1248 in EM-1 is interpreted as weathered Aroclor 1242 that lost some lower-chlorinated congeners through volatilization or dissolution.

The compositions of Aroclors 1016 and 1242 also are relatively similar, with both Aroclors dominated by Cl-2, Cl-3 and Cl-4 homologues. This similarity suggests that the 1248 pattern also could be partly the result of weathered Aroclor 1016. Although Chiarenzelli et al. (1997) and colleagues did not study Aroclor 1016 volatilization, Aroclors 1016 and 1242 are similar enough that they would likely weather similarly. Separating their individual contributions to EM-1 was not possible using the existing data set; thus, EM-1 likely represents a mixture of Aroclor 1254 with weathered residues of Aroclors 1242 and 1016, resembling a 40/60 mixture of Aroclors 1254/1248.

EM-1 was observed in high proportions primarily in surface sediment samples. This is consistent with the geographic and temporal distribution of this pattern described by Battelle (2001b) for cores collected during the 2000 sampling event. This further corroborates the hypothesis that EM-1 is characteristic of the PCB source from Sangamo-Weston.

EM-2 for 2001 is analogous to the EM-2 pattern resolved in the 2000 model. The congeners that make up EM-2 preferentially exhibit chlorines in the 2 and 6 (*ortho*) and 4 (*para*) positions. The dominant congeners are 2,2′/2,6-dichlorobiphenyl (PCB 4/10), 2-chlorobiphenyl (PCB 1), 2,2′,6-trichlorobiphenyl (PCB 19), and 2,2′,3/2,4′,6-trichlorobiphenyl (PCB 16/32). This is consistent with *process C* dechlorination as described in the literature by Bedard and Quensen (1995) and Quensen et al. (1990). The inferred Aroclor 1242/1254 source in the study area and the dominance of *ortho*- and *para*-chlorines in EM-2 (i.e., the absence of congeners with chlorines in *meta* positions) suggest that EM-2 is a result of a microbial dechlorination process.

The highest EM-2 proportions were seen in the cores of T-L and T-I, where EM-2 approached 75% of the PCBs in the deeper and older sediments. The distribution of EM-2 in the surface sediments was much lower than for EM-1, generally less than 10%. EM-2 was not a major contributor to surface sediment composition.

End-Member 3 is a new pattern that was resolved using the combined 2000 and 2001 data and is very similar to Aroclor 1242. The high proportions of PCB8/5, PCB16/32, PCB17 and PCB18 in EM-3 make this pattern more consistent with Aroclor 1242 than with Aroclor 1248. However, the principal difference between EM-3 and Aroclor 1242 is that EM-3 does not exhibit several low-chlorinated congeners characteristic of 1242: PCB1, PCB3 and PCB10. Thus, EM-3 is consistent with an Aroclor 1242 pattern that has been slightly weathered.

EM-3 was observed in highest proportions in three surface sediment samples from location C-1. This result is consistent with the following information: (1) C-1 was the sampling station closest to Sangamo-Weston (within 1 mile); (2) U.S. EPA (1994) reported that Sangamo-Weston used Aroclors 1242 and 1016; and (3) one would expect the least altered 1242 pattern to be found nearest its source. EM-3 was the only new pattern resolved as a result of sampling in 2001; samples from 2000 did not include sampling stations this close to Sangamo-Weston.

End-Member 4 is analogous to the EM-3 pattern resolved in the 2000 model. The congener pattern is characterized by dichloro-, trichloro-, and tetrachlorobiphenyls. Review of known dechlorination processes suggest that this pattern is related to *Process H′* dechlorination (Bedard and Quensen, 1995; Alder et al., 1993; Rhee et al., 1993). *Process H′* involves dechlorination of 2,3-, 2,3,4, and possibly 2,3,6-chlorobiphenyl groups from the *meta* (3 and 5) positions, and 3,4- and 2,4,5-chlorobiphenyls from the *para* (4) position.

EM-4 was observed in high proportions in samples from all cores and was consistently observed throughout the surface sediments. As an intermediate dechlorination congener pattern, it was not surprising to find EM-4 distributed throughout the sediment cores. These results suggest that most or all the sediments have undergone varying degrees of dechlorination historically.

The PCB congener composition of the surface water samples is shown in Figure 5-24. Only PCBs used in the PVA model are shown. Most other PCBs were present in very low concentrations or were below detection, particularly the high-molecular-weight PCBs. The highest EM contributions in the aqueous samples were from the two relatively unaltered Aroclor patterns, namely EM-1 and EM-3, which represented the 60/40 Aroclor 1248/1254 mixture and Aroclor 1242, respectively.

The background samples (C-0, C-2, and C-4) had the lowest relative concentrations of low-molecular-weight PCBs, with only trace PCB concentrations of congeners below PCB28 (2,4,4′-trichlorobiphenyl). Nearer the source (C-1 and C-3, close to the former Sangamo-Weston plant), the distribution more closely resembled EM-1 and PCBs were broadly distributed among mono-, di-, tri-, tetra-, and pentachlorobiphenyl congeners.

EM-2 (*Process C*) was observed in relatively high proportions (>35%) in the four samples located furthest downstream from the Sangamo-Weston plant in Twelvemile Creek (C-5 and C-6) and in Lake Hartwell (T-O and T-L). Direct inspection of the raw sample compositions indicates that these samples exhibit a congener pattern consistent with *Process C* dechlorination. Thus, the proportion of EM-2 and the relative accumulation of lower-molecular-weight PCBs appeared to increase with distance from the former Sangamo-Weston plant and with residence time in the river/lake ecosystem, suggesting that some dechlorination occurred during sediment transport through Twelvemile Creek and into the lake.

8.5 Sediment Accumulation and Accumulation Rates

Sediment cores from Twelvemile Creek/Lake Hartwell were age dated using the natural radioisotope ^{210}Pb. The sedimentation process in Twelvemile Creek/Lake Hartwell has been influenced by two hydroelectric impoundments and a water supply reservoir, upgradient of Lake Hartwell. Historically, the dams have acted as temporary sediment impoundments. Sediment release events created multiple silt/sand layers in the river and lake. These layers were most evident in Cores T-O-B, T-L-A, and T-I-B. As expected, the sand layers in these three cores contained very low TOC concentrations, relatively large grain size, and little ^{210}Pb. The irregular sedimentation patterns in other cores meant that portions of some cores also could not be dated.

Sediment accumulation rates (cm/yr) are plotted against core segment age in Figure 6-1. Sedimentation rates are highest at the surfaces of the cores and decrease rapidly with core depth due to sediment compaction and water loss with depth. T-O-B and T-L-B had the highest average sediment accumulation rates of the seven age dated cores. Sediment accumulation rates for T-I-A and T-I-B were similar; the average rates for these cores were 2.81 and 2.87 cm/yr, respectively.

The sediment accumulation rates were used to calculate sedimentation rates, measured in g/cm^2-yr. This is a measure of the mass of sediment deposited per year, as opposed to the sediment depth per year. Sedimentation rates should be relatively constant and are not influenced by sediment compaction. Core T-L-B had the highest sedimentation rate of 5.50 g/cm^2-yr, and Core T-L-A had the lowest rate of 1.05 g/cm^2-yr.

The 1-mg/kg t-PCB goal has been achieved only in Core T-L-A. The 1-mg/kg t-PCB goal is expected to be achieved within 2 to 5 years in the vicinity of Core T-I-B. The 0.4-mg/kg t-PCB goal is expected to be achieved within 2 to 4 years at T-O-A, within 3 to 5 years at T-I-A and T-L-B, and 5 to 10 years at T-I-B. Lastly, the 0.05-mg/kg t-PCB goal is expected to be achieved within 6 to 9 years at T-O-C and T-I-A, 8 to 10 years at T-L-B, 10 to 15 years at T-O-A and T-I-B, and 12 to 15 years at T-L-A.

The HEC-6 model used for the ROD for the Sangamo-Weston/Twelvemile Creek/Lake Hartwell Superfund Site (U.S. EPA, 1994) to approximate sediment accumulation overpredicted sediment accumulation rates in the Transect O cores by a factor of approximately three times and underpredicted rates in Transect I cores. Transect L was the only transect that had a model-estimated sediment accumulation rate closely matching the measured rate. These results were similar to what was found in the previous study at Lake Hartwell (Battelle, 2001b).

8.6 Storm Event Summary

A search was done of NOAA's database, the NHC's storm tracking database, the South Carolina State Climatology Office database, and the USACE Lake Hartwell Web site to determine if storm events in the area would affect PCB sediment concentrations. Extreme mixing from a major storm event would cause uniform concentrations in the t-PCB depth concentration profiles. Concentration profiles for cores taken during the previous study at Lake Hartwell (Battelle, 2001b) and the profiles for the cores in the present study were examined for signs of mixing throughout the cores. All cores except N and J in the 2000 study showed a steady increase in t-PCB concentration in the first 20 cm of each core, indicating that mixing was not likely. The t-PCB concentrations in Core J were inconclusive for mixing because the core was shallow (0-27 cm) and the concentrations were all less than 1.5 mg/kg. Concentrations in the first 20 cm of Core N varied slightly, but concentrations at 20 cm more than doubled.

Cores for the present study indicate no visually apparent mixing in Cores T-I-A, T-I-B, T-L-A, T-L-B, and T-L-C. Cores T-O-A and T-O-B suggest possible signs of mixing in the top 30 cm of each core, but the concentrations in these portions of the cores were relatively low. This variation in concentration could also be caused by variations in the concentrations of deposited material during recent drought years at these locations. If mixing did occur in Twelvemile Creek, it did not appear to reach the deep portion of the sediment profile where PCB concentrations were the highest.

Because the top layers of most cores taken during both studies had relatively low t-PCB concentrations, it would take a huge storm event to cause the top 30 cm of sediments to be lifted in order for the highly contaminated sediments to be exposed and move downstream. It appears that, short of dam failure, no other scenario is catastrophic enough to expose the deep sediments.

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APPENDIX A

CHAIN OF CUSTODY FORMS

Battelle
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SEDIMENT CORING LOG SHEET (SCLS)

DATE/TIME: 5/7/01 1311	SAMPLE LOCATION COORDINATES (GPS): LAT. 34 43.74014 LONG. 82 48.70709
SAMPLING LOCATION NUMBER: ~~SLN~~- T-O-A	SAMPLER'S NAME(S): Jennifer Ickes, Victor Magar, Jim Abbott
DEPTH OF WATER COLUMN: 12.3'	

CORE LENGTH 108 cm

Interval	Sample ID
0-5 cm	~~SLN~~ T-O-A-1
5-10 cm	~~SLN~~ T-O-A-2
10-15 cm	~~SLN~~ T-O-A-3
15-20 cm	~~SLN~~ T-O-A-4
20-25 cm	~~SLN~~ T-O-A-5
25-30 cm	~~SLN~~ T-O-A-6
30-35 cm	~~SLN~~ T-O-A-7
35-40 cm	~~SLN~~ T-O-A-8
40-45 cm	~~SLN~~ T-O-A-9
45-50 cm	~~SLN~~ T-O-A-10
50-55 cm	~~SLN~~ T-O-A-11
55-60 cm	~~SLN~~ T-O-A-12
60-65 cm	~~SLN~~ T-O-A-13
65-70 cm	~~SLN~~ T-O-A-14
70-75 cm	~~SLN~~ T-O-A-15
75-80 cm	~~SLN~~ T-O-A-16
80-85 cm	~~SLN~~ T-O-A-17
85-90 cm	~~SLN~~ T-O-A-18
90-95 cm	~~SLN~~ T-O-A-19
95-100 cm	~~SLN~~ T-O-A-20
100-108	T-O-A-21

COMMENTS

Core was Silt /Clay with
Some Sand lens.
lost most of top 5 cm while
extruding (PCB Sample only)
Saved bottom 8 cm

SEDIMENT CORING LOG SHEET (SCLS)

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DATE/TIME: 5/7/01 1400	SAMPLE LOCATION COORDINATES (GPS): LAT. 34 43.~~74014~~ 75065 JAI
SAMPLING LOCATION NUMBER: SLN- T-O-B	LONG. 82 48.~~70709~~ 71411 JAI
DEPTH OF WATER COLUMN: 10.5	SAMPLER'S NAME(S): J. Ickes, V. Magar, J. Abbott

CORE LENGTH 95 cm

Depth	Sample	COMMENTS
0-5 cm	~~SLN~~-T-O-B-1	Silt
5-10 cm	~~SLN~~-T-O-B-2	
10-15 cm	~~SLN~~-T-O-B-3	
15-20 cm	T ~~SLN~~-O-B-4	
20-25 cm	T ~~SLN~~-O-B-5	
25-30 cm	T ~~SLN~~-O-B-6	
30-35 cm	T ~~SLN~~-O-B-7	
35-40 cm	T ~~SLN~~-O-B-8	
40-45 cm	T ~~SLN~~-O-B-9	
45-50 cm	T ~~SLN~~-O-B-10	Sand layer appeared
50-55 cm	T ~~SLN~~-O-B-11	
55-60 cm	~~SLN-____-12~~	No sample
60-65 cm	T ~~SLN~~-O-B-13	
65-70 cm	~~SLN-____-14~~	No sample
70-75 cm	T ~~SLN~~-O-B-15 STET	
75-80 cm	T ~~SLN-____-16~~	No sample
80-85 cm	T ~~SLN~~-O-B-17	
85-90 cm	~~SLN-____-18~~	No sample
90-95 cm	T ~~SLN~~-O-B-19	
~~95-100~~ cm	~~SLN-____-20~~	No sample

SEDCORELOG02.CDR

SEDIMENT CORING LOG SHEET (SCLS)

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DATE/TIME: 5/7/01 1510	SAMPLE LOCATION COORDINATES (GPS): LAT. 34 43.76320 LONG. 82 48.72648
SAMPLING LOCATION NUMBER: SLN- T-O-C	SAMPLER'S NAME(S): V. Magar, J. Abbott, J. Ickes
DEPTH OF WATER COLUMN: 12.5'	

CORE LENGTH 146 cm

Interval	Sample	COMMENTS
0-5 cm	~~SLN~~ T-O-C-1	Silt
5-10 cm	SLN-O-C-2	
10-15 cm	SLN-O-C-3	
15-20 cm	SLN-O-C-4	
20-25 cm	SLN-O-C-5	
25-30 cm	SLN-O-C-6	
30-35 cm	SLN-O-C-7	
35-40 cm	SLN-O-C-8	
40-45 cm	SLN-O-C-9	
45-50 cm	SLN-O-C-10	
50-55 cm	SLN-O-C-11	
55-60 cm	SLN-O-C-12	
60-65 cm	SLN-O-C-13	
65-70 cm	SLN-O-C-14	
70-75 cm	SLN-O-C-15	
75-80 cm	SLN-O-C-16	
80-85 cm	SLN-O-C-17	Sand layer
85-90 cm	SLN-O-C-18	Sand
90-95 cm	SLN-O-C-19	Sand w/ last 1cm of Silt/Clay
95-100 cm	SLN-O-C-20	Silt/Clay

SEDCORELOG02.CDR

SEDIMENT CORING LOG SHEET (SCLS)

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DATE/TIME: 5/8/01 1035

SAMPLING LOCATION NUMBER: SLN- T - L - A

DEPTH OF WATER COLUMN: 11.5'

SAMPLE LOCATION COORDINATES (GPS): LAT. ~~33~~ JI 34 43.07187 LONG. 82 49.56221

SAMPLER'S NAME(S): Victor Magor, Eric Foote

CORE LENGTH 127 cm

Interval	Sample ID	COMMENTS
0-5 cm	~~SLN~~-T-L-A-1	~~Clay~~ JAI /Silt
5-10 cm	~~SLN~~-T-L-A-2	
10-15 cm	~~SLN~~-T-L-A-3	
15-20 cm	~~SLN~~ T -L-A-4	
20-25 cm	~~SLN~~ T -L-A-5	
25-30 cm	~~SLN~~ T -L-A-6	Sand lens
30-35 cm	~~SLN~~ T -L-A-7	Sand lens
35-40 cm	~~SLN~~ T -L-A-8	Sand lens
40-45 cm	~~SLN~~ T -L-A-9	Sand lens
45-50 cm	~~SLN~~ T -L-A-10	Sand lens
50-55 cm	~~SLN~~ T -L-A-11	Sand
55-60 ~~60-65~~ JI cm	~~SLN~~ T -L-A-12	Sand
60-65 ~~65-70~~ cm	~~SLN~~ T -L-A-13	Sand
65-70 ~~70-75~~ cm	~~SLN~~ T -L-A-14	Clay/Silt
70-75 cm	~~SLN~~ T -L-A-15	
75-80 cm	~~SLN~~ T -L-A-16	
80-85 cm	~~SLN~~ T -L-A-17	
85-90 cm	~~SLN~~ T -L-A-18	
90-95 cm	~~SLN~~ T -L-A-19	
100 cm	~~SLN~~ T -L-A-20	

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SEDIMENT CORING LOG SHEET (SCLS)

DATE/TIME: 5/~~8~~ 7/01 JAI ~~1102~~ 1715	SAMPLE LOCATION COORDINATES (GPS): LAT. 34 43. ~~10581~~ 11038 JAI
SAMPLING LOCATION NUMBER: SLN- T-L-~~A~~ B JAI	LONG. 82 49. ~~66388~~ 57013
DEPTH OF WATER COLUMN: 19.8'	SAMPLER'S NAME(S): Victor Magar, Eric Foote

CORE LENGTH 157 cm

Depth (cm)	Sample	COMMENTS
cm	~~SLN~~ T-L-B-1	Silt
cm	SLN-L-B-2	
cm	SLN-L-B-3	
cm	SLN-L-B-4	
cm	SLN-L-B-5	
cm	SLN-L-B-6	
cm	SLN-L-B-7	samples may have been mixed up.
cm	SLN-L-B-8	
cm	SLN-L-B-9	
cm	SLN-L-B-10	
cm	SLN-L-B-11	
cm	SLN-L-B-12	
cm	SLN-L-B-13	
cm	SLN-L-B-14	
cm	SLN-L-B-15	
cm	SLN-L-B-16	Sand/Silt
cm	SLN-L-B-17	Sand/Silt
cm	SLN-L-B-18	Silt
cm	SLN-L-B-19	
95-100 cm	SLN-L-B-20	Sand/Silt

SEDIMENT CORING LOG SHEET (SCLS)

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DATE/TIME: 5/7/01 1635	SAMPLE LOCATION COORDINATES (GPS): LAT. 34 43.10666 LONG. 82 49.60737
SAMPLING LOCATION NUMBER: SLN- T-L-C	SAMPLER'S NAME(S): Victor Magar, Eric Foote
DEPTH OF WATER COLUMN: 20.5'	

CORE LENGTH 150 cm

Depth	Sample ID	COMMENTS
0-5 cm	~~SLN~~ T- L-C -1	Silt
5-10 cm	~~SLN~~ T- L-C -2	
10-15 cm	~~SLN~~ T- L-C -3	
15-20 cm	~~SLN~~ T- L-C -4	
20-25 cm	~~SLN~~ T- L-C -5	
25-30 cm	~~SLN~~ T- L-C -6	Sand / Silt w/ air bubbles
30-35 cm	~~SLN~~ T- L-C -7	Sand / Silt "
35-40 cm	~~SLN~~ T- L-C -8	Sand / Silt "
40-45 cm	~~SLN~~ T- L-C -9	Silt
45-50 cm	~~SLN~~ T- L-C -10	
50-55 cm	~~SLN~~ T- L-C -11	
55-60 cm	~~SLN~~ T- L-C -12	
60-65 cm	~~SLN~~ T- L-C -13	
65-70 cm	~~SLN~~ T- L-C -14	
70-75 cm	~~SLN~~ T- L-C -15	
75-80 cm	~~SLN~~ T- L-C -16	
80-85 cm	~~SLN~~ T- L-C -17	Some sand present
85-90 cm	~~SLN~~ T- L-C -18	"
90-95 cm	~~SLN~~ T- L-C -19	"
95-100 cm	~~SLN~~ T- L-C -20	Silt / Sand / Clay

SEDCORELOG02.CDR

SEDIMENT CORING LOG SHEET (SCLS)

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DATE/TIME: 5/8/01 1419	SAMPLE LOCATION COORDINATES (GPS): LAT. 34 42.25076 LONG. 82°50. 51735
SAMPLING LOCATION NUMBER: SLN- T - I - A	SAMPLER'S NAME(S): Victor Magar, Eric Foote
DEPTH OF WATER COLUMN: 28.0'	

CORE LENGTH 127 cm

Depth	Sample ID	COMMENTS
0-5 cm	~~SLN~~ T - I-A -1	Silt
5-10 cm	~~SLN~~ T - I-A -2	
10-15 cm	~~SLN~~ T - I-A -3	
15-20 cm	~~SLN~~ T - I-A -4	
20-25 cm	~~SLN~~ T - I-A -5	
25-30 cm	~~SLN~~ T - I-A -6	
30-35 cm	~~SLN~~ T - I-A -7	
35-40 cm	~~SLN~~ T - I-A -8	
40-45 cm	~~SLN~~ T - I-A -9	
45-50 cm	~~SLN~~ T - I-A -10	
50-55 cm	~~SLN~~ T - I-A -11	
55-60 cm	~~SLN~~ T - I-A -12	
60-65 cm	~~SLN~~ T - I-A -13	
65-70 cm	~~SLN~~ T - I-A -14	
70-75 cm	~~SLN~~ T - I-A -15	
75-80 cm	~~SLN~~ T - I-A -16	
80-85 cm	~~SLN~~ T - I-A -17	Clay / Silt
85-90 cm	~~SLN~~ T - I-A -18	
90-95 cm	~~SLN~~ T - I-A -19	
95-100 cm	~~SLN~~ T - I-A -20	

SEDIMENT CORING LOG SHEET (SCLS)

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DATE/TIME: 5/8/01 1439	SAMPLE LOCATION COORDINATES (GPS): LAT. 34 42.26217 LONG. 82 50.67120
SAMPLING LOCATION NUMBER: SLN- T - I - B	SAMPLER'S NAME(S): Victor Magor, Eric Foote
DEPTH OF WATER COLUMN: 31.0'	

CORE LENGTH 127 cm

Depth	Sample	COMMENTS
0-5 cm	SLN-I-B-1	Silt
cm	SLN-I-B-2	
cm	SLN-I-B-3	
cm	SLN-I-B-4	
cm	SLN-I-B-5	
cm	SLN-I-B-6	
cm	SLN-I-B-7	Sand Silt
cm	SLN-I-B-8	
cm	SLN-I-B-9	
cm	SLN-I-B-10	
cm	SLN-I-B-11	
cm	SLN-I-B-12	
cm	SLN-I-B-13	
cm	SLN-I-B-14	
cm	SLN-I-B-15	
cm	SLN-I-B-16	
cm	SLN-I-B-17	
cm	SLN-I-B-18	
cm	SLN-I-B-19	
95-100 cm	SLN-I-B-20	

SEDCORELOG02.CDR

SEDIMENT CORING LOG SHEET (SCLS)

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DATE/TIME: 1145 5/9/01	SAMPLE LOCATION COORDINATES (GPS): LAT. N 34° 44.556' LONG. W082° 48.137'
SAMPLING LOCATION NUMBER: SLN- C6 - ~~B~~ D	SAMPLER'S NAME(S): Victor Magar, Eric Foote
DEPTH OF WATER COLUMN: -	

CORE LENGTH 27 cm

		COMMENTS
5-12 cm	~~SLN~~-C6-D-1	Clay layer
20-27 cm	~~SLN~~-C6-D-2	Sand
cm	SLN--3	
cm	SLN--4	Only took Clay layer
cm	SLN--5	and bottom of core
cm	SLN--6	
cm	SLN--7	
cm	SLN--8	
cm	SLN--9	
cm	SLN--10	
cm	SLN--11	
cm	SLN--12	
cm	SLN--13	
cm	SLN--14	
cm	SLN--15	
cm	SLN--16	
cm	SLN--17	
cm	SLN--18	
cm	SLN--19	
cm	SLN--20	

SEDIMENT CORING LOG SHEET (SCLS)

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DATE/TIME: 1145 5/9/01	SAMPLE LOCATION COORDINATES (GPS): LAT. N34° 44.556' LONG. W082° 48.137'
SAMPLING LOCATION NUMBER: SLN- C6-C	SAMPLER'S NAME(S): Victor Magar, Eric Foote
DEPTH OF WATER COLUMN: -	

CORE LENGTH 52 cm

Interval	Sample	
40-52 cm	~~SLN-40-52~~ C6-C-1 (SA1)	
___ cm	SLN-________-2	
___ cm	SLN-________-3	
___ cm	SLN-________-4	
___ cm	SLN-________-5	
___ cm	SLN-________-6	
___ cm	SLN-________-7	
___ cm	SLN-________-8	
___ cm	SLN-________-9	
___ cm	SLN-________-10	
___ cm	SLN-________-11	
___ cm	SLN-________-12	
___ cm	SLN-________-13	
___ cm	SLN-________-14	
___ cm	SLN-________-15	
___ cm	SLN-________-16	
___ cm	SLN-________-17	
___ cm	SLN-________-18	
___ cm	SLN-________-19	
___ cm	SLN-________-20	

COMMENTS

Sand down to 40 cm

Silt and Sand at 40-52cm

SEDCORELOG02.CDR

SEDIMENT CORING LOG SHEET (SCLS)

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DATE/TIME: 11:00 5/9/01		SAMPLE LOCATION COORDINATES (GPS):	LAT. N34° 51.366'
SAMPLING LOCATION NUMBER: SLN- C-3-D			LONG. W082° 44.679'
DEPTH OF WATER COLUMN: –		SAMPLER'S NAME(S):	Victor Magar Eric Foote

CORE LENGTH 30 cm

Depth	Sample	COMMENTS
20-30 cm	SLN- C-3-D -1	Sand
____ cm	SLN-________-2	
____ cm	SLN-________-3	
____ cm	SLN-________-4	
____ cm	SLN-________-5	
____ cm	SLN-________-6	
____ cm	SLN-________-7	
____ cm	SLN-________-8	
____ cm	SLN-________-9	
____ cm	SLN-________-10	
____ cm	SLN-________-11	
____ cm	SLN-________-12	
____ cm	SLN-________-13	
____ cm	SLN-________-14	
____ cm	SLN-________-15	
____ cm	SLN-________-16	
____ cm	SLN-________-17	
____ cm	SLN-________-18	
____ cm	SLN-________-19	
____ cm	SLN-________-20	

SEDIMENT CORING LOG SHEET (SCLS)

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DATE/TIME: 11:00 5/9/01	SAMPLE LOCATION COORDINATES (GPS): LAT. N34° 51.346' LONG. W 082° 44.679'
SAMPLING LOCATION NUMBER: SLN- C-3-C	SAMPLER'S NAME(S): Victor Magar, Eric Foote
DEPTH OF WATER COLUMN: ______	

CORE LENGTH 15 cm

Depth	Sample	COMMENTS
5-15 cm	SLN-C-3-C-1	Sand
___ cm	SLN-________-2	
___ cm	SLN-________-3	
___ cm	SLN-________-4	
___ cm	SLN-________-5	
___ cm	SLN-________-6	
___ cm	SLN-________-7	
___ cm	SLN-________-8	
___ cm	SLN-________-9	
___ cm	SLN-________-10	
___ cm	SLN-________-11	
___ cm	SLN-________-12	
___ cm	SLN-________-13	
___ cm	SLN-________-14	
___ cm	SLN-________-15	
___ cm	SLN-________-16	
___ cm	SLN-________-17	
___ cm	SLN-________-18	
___ cm	SLN-________-19	
___ cm	SLN-________-20	

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Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____________

Proj. No.	Project Title	SAMPLE TYPE (√)
G432801	LAKE HARTWELL	

SAMPLERS: (Signature) [signature]

DATE	TIME	SAMPLE I.D.													Container No.	Number of Containers	Remarks
5/1/01	1230	BACKGROUND														4	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
[signature]	5/9/01	0852					

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)

Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks

Page 1 of 1

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ________

Proj. No.	Project Title
G482801	LAKE HARTWELL

SAMPLERS: (Signature) A. Scott

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√)													Container No.	Number of Containers	Remarks
5/8/01	0932	T-0															4	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
A. Scott	5/9/01	0830					
Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)

Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____________

Proj. No.	Project Title
G482801	LAKE HARTWELL

SAMPLERS: (Signature) Abbott

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√)	Container No.	Number of Containers	Remarks
5/8/01	1410	T - I			4	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
Abbott	5/9/01	0835					
Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)

Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____________

Proj. No.	Project Title
G482801	LAKE HARTWELL

SAMPLERS: (Signature) [signature]

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√)	Container No.	Number of Containers	Remarks
5/8/01	1005	T-L			4	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
[signature]	5/9/01	0845					

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)

Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks

Page 1 of 1

Battelle
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CHAIN OF CUSTODY RECORD

Form No. ______

Proj. No. G482801 -

Project Title: LAKE HARTWELL

SAMPLERS: (Signature) [signature]

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√)													Container No.	Number of Containers	Remarks
5/7/01	1311	T-O-A															4	
5/7/01	1400	T-O-B ✓															4	
5/7/01	1510	T-O-C ✓															4	
5/8/01	1035	T-L-A															4	
5/ /01	1102	T-L-B															4	
5/7/01	1135	T-L-C ✓															4	
5/ /01	1419	T-I-A ✓															4	
5/ /01	1439	T-I-B ✓															4	
5/8/01	1230	BACKGROUND															4	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	5/9/01 0825				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Page 1 of 1

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ______

Proj. No.	Project Title
G482801-UC13	Lake Hartwell

SAMPLERS: (Signature) [signature]

DATE	TIME	SAMPLE I.D.	DSD												Container No.	Number of Containers	Remarks
7-17-01	1435	T-L-A-15	✓													1	
↓	↓	T-L-A-16	✓													1	
		T-L-A-17	✓													1	
		T-L-A-18	✓													1	
		T-L-A-19	✓													1	
		T-L-A-20	✓													1	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	7/17/01 1530				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Page 3 of 3

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ________

Proj. No.	Project Title
G482201-U015	Lake Hartwell

SAMPLERS: (Signature) [illegible]

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): BSD	Container No.	Number of Containers	Remarks
7-17-01	1430	T-L-B-18	√		1	
		T-L-B-19	√		1	
↓	↓	T-L-B-20	√		1	
7-17-01	1435	T-L-A-1	√		1	
		T-L-A-2	√		1	
		T-L-A-3	√		1	
		T-L-A-4	√		1	
		T-L-A-5	√		1	
		T-L-A-6	√		1	
		T-L-A-7	√		1	
		T-L-A-8	√		1	
		T-L-A-9	√		1	
		T-L-A-10	√		1	
		T-L-A-11	√		1	
		T-L-A-12	√		1	
		T-L-A-13	√		1	
↓	↓	T-L-A-14	√		1	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[illegible]	7/17 / 1550				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

Page 2 of 3

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ______

Proj. No.	Project Title
G402801-UC15	Lake Harbor

SAMPLERS: (Signature) [illegible]

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√) PSD	Container No.	Number of Containers	Remarks
7-17-01	1430	T-L-B-1	✓		1	
↓	↓	T-L-B-2	✓		1	
		T-L-B-3	✓		1	
		T-L-B-4	✓		1	
		T-L-B-5	✓		1	
		T-L-B-6	✓		1	
		T-L-B-7	✓		1	
		T-L-B-8	✓		1	
		T-L-B-9	✓		1	
		T-L-B-10	✓		1	
		T-L-B-11	✓		1	
		T-L-B-12	✓		1	
		T-L-B-13	✓		1	
		T-L-B-14	✓		1	
		T-L-B-15	✓		1	
		T-L-B-16	✓		1	
↓	↓	T-L-B-17	✓		1	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
[illegible]	7/17/01	1530					
Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks	

[redacted]

SHIPPER:

SHIPPING MEMO

SHIPPER'S NUMBER [illegible]

BATTELLE
505 KING AVENUE
COLUMBUS, OHIO 43201-2693 AREA CODE 614 PHONE 424-6424

SHIP TO [illegible]

ATTENTION OF [illegible] 206-[illegible]

STREET 7865 [illegible]

CITY [illegible] STATE WA ZIP CODE [illegible]

REFER TO OUR PURCHASE ORDER NO.

☐ PREPAID ☐ COLLECT ☐ LETTER ENCLOSED

BY WAY OF

QUANTITY	DESCRIPTION	INVENTORY NUMBER
40	[illegible]	

FOR GOVERNMENT PROPERTY, THE SHIPPING MEMO MUST SPECIFICALLY IDENTIFY THE PROJECT NUMBER, THE COMPLETE ITEM DESCRIPTION, INVENTORY NUMBER, AND THE REASON FOR SHIPMENT.

IS THE ABOVE SUBSTANCE HAZARDOUS?

☐ YES ☒ NO

DOES THE ABOVE CONTAIN DRY ICE?

☐ YES ☒ NO AMOUNT IN KGS____

24 HOUR CONTACT PHONE #

PROPERTY CONTROL APPROVAL

PURCHASING APPROVAL

DATE [illegible]

SHIPMENT ORDERED BY [illegible]

ORG CODE [illegible]

BADGE NO.: [illegible]

EXT. [illegible]

ROOM NO. [illegible]

GOVERNMENT PROJECT NUMBER [illegible]

VALUE $

REASON FOR SHIPMENT

- ☐ Return and Credit
- ☐ Repairs
- ☐ Adjustment
- ☐ Replacement
- ☐ OTHER (Must Explain) If Government Property, See Note Below

☐ Government Contract Deliverable

COST

CARRIER ____

SHIPPING ____

TOTAL ____

FREIGHT CARRIER

PRO. NO.

AMOUNT

NUMBER OF PACKAGES

CARTONS ____

BOXES ____

CRATES ____

OTHER ____

WEIGHT

DATE OF SHIPMENT

SHIPPING CLERK

DUPLICATE

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. D

Proj. No.	Project Title
[illegible]	Lake Hartwell

SAMPLERS: (Signature) [illegible]

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√) DSD	Container No.	Number of Containers	Remarks
7/11/[illegible]	[illegible]	T-1-B-15	✓		1	
|	|	-16	✓		1	
|	|	-17	✓		1	
|	|	-18	✓		1	
|	|	-19	✓		1	
|	|	-20	✓		1	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[illegible]	7/11/[illegible] 1:35				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

Page 3 of 3

...elle
...Laboratories

CHAIN OF CUSTODY RECORD

Form No. ______

...j. No.	Project Title
64828011-UC15	Lake Hartwell

SAMPLERS: (Signature) [illegible]

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√) PSD	Container No.	Number of Containers	Remarks
[illegible]	[illegible]	T-1-A-18	✓		1	
|	|	-19	✓		1	
|	|	-20	✓		1	
|	|	T-1-B-1	✓		1	
|	|	-2	✓		1	
|	|	-3	✓		1	
|	|	-4	✓		1	
|	|	-5	✓		1	
|	|	-6	✓		1	
|	|	-7	✓		1	
|	|	-8	✓		1	
|	|	-9	✓		1	
|	|	-10	✓		1	
|	|	-11	✓		1	
|	|	-12	✓		1	
|	|	-13	✓		1	
|	|	-14	✓		1	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[illegible]	[illegible] 1:35				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____________

Proj. No.	Project Title
[illegible]	Lake Hartwell

SAMPLERS: (Signature) [illegible]

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): DED	Container No.	Number of Containers	Remarks
[illegible]	1225	T-1-A-1	✓		1	
		-2	✓		1	
		-3	✓		1	
		-4	✓		1	
		-5	✓		1	
		-6	✓		1	
		-7	✓		1	
		-8	✓		1	
		-9	✓		1	
		-10	✓		1	
		-11	✓		1	
		-12	✓		1	
		-13	✓		1	
		-14	✓		1	
		-15	✓		1	
		-16	✓		1	
		-17	✓		1	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[illegible]	7/9 / 1535				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

SHIPPER:

SHIPPING MEMO

BATTELLE
505 KING AVENUE
COLUMBUS, OHIO 43201-2693 AREA CODE 614 PHONE 424-6424

SHIPPER'S NUMBER

DATE

SHIPMENT ORDERED BY

ORG CODE

BADGE NO.

EXT.

ROOM NO.

GOVERNMENT PROJECT NUMBER

VALUE $

REASON FOR SHIPMENT

☐ Return and Credit
☐ Repairs
☐ Adjustment
☐ Replacement
☐ OTHER (Must Explain) If Government Property, See Note Below

☐ Government Contract Deliverable

SHIP TO

ATTENTION OF

STREET

CITY STATE ZIP CODE

REFER TO OUR PURCHASE ORDER NO.

BY WAY OF ☐ PREPAID ☐ COLLECT ☐ LETTER ENCLOSED

QUANTITY	DESCRIPTION	INVENTORY NUMBER
40	[illegible]	
	[illegible]	

FOR GOVERNMENT PROPERTY, THE SHIPPING MEMO MUST SPECIFICALLY IDENTIFY THE PROJECT NUMBER, THE COMPLETE ITEM DESCRIPTION, INVENTORY NUMBER, AND THE REASON FOR SHIPMENT.

IS THE ABOVE SUBSTANCE HAZARDOUS?

☐ YES ☒ NO

DOES THE ABOVE CONTAIN DRY ICE?

☐ YES ☒ NO AMOUNT IN KGS____

24 HOUR CONTACT PHONE # ____

PROPERTY CONTROL APPROVAL

PURCHASING APPROVAL

COST	
CARRIER	
SHIPPING	
TOTAL	
FREIGHT CARRIER	
PRO. NO.	AMOUNT
NUMBER OF PACKAGES	
CARTONS	
BOXES	
CRATES	
OTHER	
WEIGHT	
DATE OF SHIPMENT	
SHIPPING CLERK	

DUPLICATE

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____

Proj. No.	Project Title
64U2501-UC15	Lake Hartwell

SAMPLERS: (Signature)

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): [illegible]	Container No.	Number of Containers	Remarks
[illegible]	1515	C-6-A	✓		1	
		C-6-B	✓		1	
		C-6-C-1	✓		1	
		C-6-D-1	✓		1	
		C-6-D-2	✓		1	
		T-1-C-5	✓		1	
		T-1-C-6	✓		1	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____________

Proj. No.	Project Title
G482801UC13	Lake Hartwell

SAMPLERS: (Signature) [illegible]

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): PSD	Container No.	Number of Containers	Remarks
[illegible]	1515	T-L-C-20	✓		1	
		C0-A	✓		1	
		C0-B	✓		1	
		C1-A	✓		1	
		C1-B	✓		1	
		C1-C	✓		1	
		C1-D	✓		1	
		C2-A	✓		1	
		C2-B	✓		1	
		C3-A	✓		1	
		C3-B	✓		1	
		C3-C-1	✓		1	
		C3-D-1	✓		1	
		C4-A	✓		1	
		C4-B	✓		1	
		C5-A	✓		1	
		C5-B	✓		1	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
[illegible]	[illegible]	1515					

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)

Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____

Proj. No.	Project Title
G4820-0100-13	Lake Hartwell

SAMPLERS: (Signature) [illegible]

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (✓) PSD	Container No.	Number of Containers	Remarks
[illegible]	1515	T-L-C-1	✓		1	
		T-L-C-2	✓		1	
		T-L-C-3	✓		1	
		T-L-C-4	✓		1	
		T-L-C-7	✓		1	
		T-L-C-8	✓		1	
		T-L-C-9	✓		1	
		T-L-C-10	✓		1	
		T-L-C-11	✓		1	
		T-L-C-12	✓		1	
		T-L-C-13	✓		1	
		T-L-C-14	✓		1	
		T-L-C-15	✓		1	
		T-L-C-16	✓		1	
		T-L-C-17	✓		1	
		T-L-C-18	✓		1	
		T-L-C-19	✓		1	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[illegible]	[illegible]				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

Battelle
Columbus Laboratories

Form No. ____________

CHAIN OF CUSTODY RECORD

Proj. No.	Project Title
E48200HC13	Lake Hartwell

SAMPLERS: (Signature) [illegible]

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): PSD	Container No.	Number of Containers	Remarks
6/12/01	1515	T-O-C-4	✓		1	
		T-O-C-5	✓		1	
		T-O-C-6	✓		1	
		T-O-C-7	✓		1	
		T-O-C-8	✓		1	
		T-O-C-9	✓		1	
		T-O-C-10	✓		1	
		T-O-C-11	✓		1	
		T-O-C-12	✓		1	
		T-O-C-13	✓		1	
		T-O-C-14	✓		1	
		T-O-C-15	✓		1	
		T-O-C-16	✓		1	
		T-O-C-17	✓		1	
		T-O-C-18	✓		1	
		T-O-C-19	✓		1	
		T-O-C-20	✓		1	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[illegible]	6/11 [illegible]				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ______

Proj. No.	Project Title
[illegible]	Lake Rothwell

SAMPLERS: (Signature) [illegible signature]

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): BSD	Container No.	Number of Containers	Remarks
6/20/01	1515	T-O-B-1	✓		1	
		T-O-B-3	✓		1	
		T-O-B-4	✓		1	
		T-O-B-5	✓		1	
		T-O-B-6	✓		1	
		T-O-B-7	✓		1	
		T-O-B-8	✓		1	
		T-O-B-9	✓		1	
		T-O-B-10	✓		1	
		T-O-B-11	✓		1	
		T-O-B-13	✓		1	
		T-O-B-15	✓		1	
		T-O-B-17	✓		1	
		T-O-B-19	✓		1	
		T-O-C-1	✓		1	
		T-O-C-2	✓		1	
		T-O-C-3	✓		1	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[illegible signature]	6/21/01 1810				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____________

Proj. No.	Project Title
[illegible]	[illegible]

SAMPLERS: (Signature) [illegible]

DATE TIME	TIME DATE	SAMPLE I.D.	SAMPLE TYPE (√)	Container No.	Number of Containers	Remarks
1635	5-6-01	T-L-A			20	
1715	5-7-01	T-L-B			20	
1635	5-7-01	T-L-C			20	
1311	5-7-01	T-O-A			20	
1400	5-7-01	T-O-B			15	
1510	5-7-01	T-O-C			20	
1419	5-8-01	T-I-A			20	
1429	5-8-01	T-I-B			20	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
[illegible]	5-9-01	2030					
Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks	

Page 1 of 1

SHIPPING MEMO

SHIPPER'S NUMBER

BATTELLE
505 KING AVENUE
COLUMBUS, OHIO 43201-2693 AREA CODE 614 PHONE 424-6424

DATE 6/19/01

SHIPMENT ORDERED BY [illegible] ORG CODE [illegible]

BADGE NO. [illegible] EXT. [illegible]

ROOM NO. [illegible]

GOVERNMENT PROJECT NUMBER [illegible]

VALUE $

SHIP TO Battelle - Duxbury

ATTENTION OF Carole Peven - 781-[illegible]

STREET 397 Washington St.

CITY Duxbury STATE MA ZIP CODE [illegible]

REFER TO OUR PURCHASE ORDER NO.

BY WAY OF ☐ PREPAID ☐ COLLECT ☐ LETTER ENCLOSED

REASON FOR SHIPMENT
- ☐ Return and Credit
- ☐ Repairs
- ☐ Adjustment
- ☐ Replacement
- ☐ OTHER (Must Explain) If Government Property, See Note Below

Sample [illegible]

☐ Government Contract Deliverable

QUANTITY	DESCRIPTION	INVENTORY NUMBER
1	Cooler of Samples (Filters)	

FOR GOVERNMENT PROPERTY, THE SHIPPING MEMO MUST SPECIFICALLY IDENTIFY THE PROJECT NUMBER, THE COMPLETE ITEM DESCRIPTION, INVENTORY NUMBER, AND THE REASON FOR SHIPMENT.

IS THE ABOVE SUBSTANCE HAZARDOUS?
☐ YES ☒ NO

DOES THE ABOVE CONTAIN DRY ICE?
☐ YES ☒ NO AMOUNT IN KGS____

COST
CARRIER ____
SHIPPING ____
TOTAL ____

FREIGHT CARRIER

PRO. NO. AMOUNT

NUMBER OF PACKAGES
CARTONS ____
BOXES ____
CRATES ____
OTHER ____

WEIGHT

DATE OF SHIPMENT

SHIPPING CLERK

24 HOUR CONTACT PHONE # ____

PROPERTY CONTROL APPROVAL PURCHASING APPROVAL

DUPLICATE

Battelle
Columbus Laboratories

Form No. ____

CHAIN OF CUSTODY RECORD

Proj. No.	Project Title
G482801-0013	Lake Hartwell

SAMPLERS: (Signature) [signature]

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): PCB Filter	Container No.	Number of Containers	Remarks
5/19/01	15:15	C-0 Glass Fiber (1.0µm)	✓		1	
5/19/01	15:15	C-0 Empore (1.0µm)	✓		1	
5/19/01	17:25	C-0 Glass Fiber (1µm)	✓		1	
5/19/01	17:25	C-0 Empore	✓		1	
5/21/01	~~10:11~~ 15:00	C-1 Glass Fiber	✓		1	
5/21/01	11:11	C-1 Empore	✓		1	
5/24/01	11:18	C-2 Glass Fiber	✓		1	
5/24/01	11:18	C-2 Empore	✓		1	
5/25/01	10:28	C-3 Glass Fiber	✓		1	
5/25/01	11:00	C-3 Empore	✓		1	
5/29/01	11:21	C-4 Glass Fiber	✓		1	
5/29/01	11:21	C-4 Empore	✓		1	
5/30/01	15:30	C-5 Glass Fiber	✓		1	
5/30/01	15:30	C-5 Empore	✓		1	
6/4/01	1050	C-6 Glass Fiber	✓		1	
6/4/01	1050	C-6 Empore	✓		1	
6/5/01	11:05	Blank 3 Glass Fiber	✓		1	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
[signature]	6/19/01	1502					
Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks	

Page 1 of 2

Battelle
Columbus Laboratories

Form No.

CHAIN OF CUSTODY RECORD

Proj. No.	Project Title
G4558014013	Lake Hartwell

SAMPLERS: (Signature)

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): PCB Filter												Container No.	Number of Containers	Remarks
4/5/01	1105	Blank 3 Empore	✓													1	
5/29/01	15:42	Blank 1 Glass Fiber	✓													1	
5/29/01	15:42	Blank 1 Empore	✓													1	
4/5/01	1030	Blank 2 Glass Fiber	✓													1	
4/5/01	1030	Blank 2 Empore	✓													1	
4/12/01	1530	T-L Dup Glass Fiber	✓													1	
4/12/01	1530	T-L Dup Empore	✓													1	
4/15/01	1450	LCS Glass Fiber	✓													1	
4/15/01	1450	LCS Empore	✓													1	
4/8/01	945	T-0 Glass Fiber	✓													1	
4/8/01	945	T-0 Empore	✓													1	
4/11/01	1420	Glass Fiber T-1	✓													1	
4/11/01	1420	T-1 Empore	✓													1	
4/13/01	1510	T-L MS Glass Fiber	✓													1	
4/13/01	1510	T-L MS Empore	✓													1	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
[signature]	4/19/01	1302					
Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)

Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ______

Proj. No. [illegible]

Project Title Lake Hartwell

SAMPLERS: (Signature) [illegible]

SAMPLE TYPE (√)

DATE	TIME	SAMPLE I.D.	PCB	Container No.	Number of Containers	Remarks
5/[illegible]/91	1439	T-I-B	X		20	
5/[illegible]/91	1419	T-I-A	X		20	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[illegible]	5/14/91 1412				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____________

Proj. No.	Project Title
G482801	LAKE HARTWELL

SAMPLERS: (Signature) Abbott

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√)	Container No.	Number of Containers	Remarks
7/6/01	1145	C-0	X		2	[illegible]
7/6/01	1326	C-1	\		2	
7/6/01	1337	C-2	\		2	
7/6/01	1320	C-3	\		2	
7/6/01	1426	C-4	\		2	
7/6/01	1615	C-5	\		2	
7/6/01	1739	C-6	\		2	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
Abbott	7/6/01	1140					

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)

Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____________

Proj. No.	Project Title
G482301	LAKE HARTWELL

SAMPLERS: (Signature) [signature]

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√) PCB	Container No.	Number of Containers	Remarks
7/19/01	1102	T-L-B	X		20	
7/19/01	1012	C1-A	X		1	
7/19/01	1012	C1-B	X		1	
7/19/01	1012	C1-C	X		1	
7/19/01	1012	C1-D	X		1	
7/19/01	1113	C3-C-1	X		1	
7/19/01	1113	C3-D-1	X		1	
7/19/01	1215	C6-C-1	X		1	
7/19/01	1215	C6-D-1	X		1	
7/19/01	1215	C6-D-2	X		1	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	7/19/01 1115				
Relinquished by: (Signature)	**Date/Time**	**Received by: (Signature)**	**Relinquished by: (Signature)**	**Date/Time**	**Received by: (Signature)**
Relinquished by: (Signature)	**Date/Time**	**Received for Laboratory by: (Signature)**	**Date/Time**	**Remarks**	

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____

Proj. No.	Project Title
G482301	LAKE HARTWELL

SAMPLERS: (Signature) [signature]

DATE	TIME	SAMPLE I.D.	PCB													Container No.	Number of Containers	Remarks
5/7/01	1710	T-D-C	X														20	
5/7/01	1035	T-L-C	X														20	

SAMPLE TYPE (√)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	5/7/01 1118				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ______

Proj. No.	Project Title				
9482801	LAKE HARTWELL				

SAMPLERS: (Signature)
J. Abbott

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): PCB	Container No.	Number of Containers	Remarks
5/7/01	1311	T-O-A	X		20	
5/7/01	1400	T-L-A	X		20	
5/8/01	1035	T-O-B	X		15	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
J. Abbott	5/9/01 1036				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____________

Proj. No.	Project Title
G 482801	LAKE HARTWELL

SAMPLERS: (Signature) J Abbott

DATE	TIME	SAMPLE I.D.	TSS/VSS	Container No.	Number of Containers	Remarks
5/6/01	1520	C-3	X		2	
5/6/01	1026	C-1	X		2	
5/6/01	1057	C-2	X		2	
5/6/01	1145	C-0	X		2	
5/6/01	1436	C-4	X		2	
5/6/01	1739	C-6	X		2	
5/6/01	1615	C-5	X		2	
5/9/01	1213	T-L	X		2	
5/9/01	1342	T-0	X		2	

SAMPLE TYPE (√)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
J Abbott	5/9/01 1748	Christy Burton			

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

Page 1 of 1

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ______

Proj. No.	Project Title	SAMPLE TYPE (√)		Number of Containers	Remarks
G482801	LAKE HARTWELL	FILTER	Container No.		

SAMPLERS: (Signature)

DATE	TIME	SAMPLE I.D.	FILTER	Container No.	Number of Containers	Remarks
50901	1213	T-L	X		3	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
	50901	2230					
Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks	

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____________

Proj. No.	Project Title
G482801	LAKE HARTWELL

SAMPLERS: (Signature)

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): FILTER												Container No.	Number of Containers	Remarks
50901	1213	T-L	X													5	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
	50901	1020					
Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks	

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____________

Proj. No.	Project Title	
G482801	LAKE HARTWELL	

SAMPLERS: (Signature)

DATE	TIME	SAMPLE I.D.	FILTER												Container No.	Number of Containers	Remarks
50901	1213	T-L	X													3	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	50901 1020				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ______

Proj. No.	Project Title	
G48280	LAKE HARTWELL	

SAMPLERS: (Signature)

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): FILTER												Container No.	Number of Containers	Remarks
50901	1342	T-L	X													1	1
50601	1739	C-6	X													2	2

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
	5090	1015					

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)

Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____________

Proj. No.	Project Title
G482801	LAKE HARTWELL

SAMPLERS: (Signature)

DATE	TIME	SAMPLE I.D.	FILTER												Container No.	Number of Containers	Remarks
50901	1213	T-L	X													3	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
	5901	1015	Christy Hutton				
Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks	

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ______

Proj. No.	Project Title	SAMPLE TYPE (√)
G482801	LAKE HARTWELL	

SAMPLERS: (Signature) [signature]

DATE	TIME	SAMPLE I.D.	FILTER												Container No.	Number of Containers	Remarks
50901	1342	T-0	X													5	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
[signature]	50901	2300	[signature]				
Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks	

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ______

Proj. No.	Project Title	SAMPLE TYPE (√)	Number of Containers	Remarks
G482801	LAKE HARTWELL			

SAMPLERS: (Signature)

DATE	TIME	SAMPLE I.D.	FILTER												Container No.	Number of Containers	Remarks
50601	1739	C-6	X													3	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
	50901	2215					

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)

Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks

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Battelle
Columbus Laboratories

Form No. ______

CHAIN OF CUSTODY RECORD

Proj. No.	Project Title		SAMPLE TYPE (√)	Container No.	Number of Containers	Remarks
G482801	LAKE HARTWELL					

SAMPLERS: (Signature) [signature]

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√)	Container No.	Number of Containers	Remarks
50601	1615	C-5			5	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
[signature]	50901	10:20	Christy Burton				
Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks	

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____________

Proj. No.	Project Title		
G482801	LAKE HARTWELL		

SAMPLERS: (Signature)

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): FILTER	Container No.	Number of Containers	Remarks
5-6-01	10:57	C-2	X		3	
5-6-01	14:36	C-4	X		2	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	5901 10:15				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____________

Proj. No.	Project Title
GU82801	LAKE HARTWELL

SAMPLERS: (Signature)

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): FILTER													Container No.	Number of Containers	Remarks
50601	1436	C-4															3	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
	50901	2230					

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)

Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ____

Proj. No.	Project Title	SAMPLE TYPE (√)														
G482801	LAKE HARTWELL															

SAMPLERS: (Signature)

DATE	TIME	SAMPLE I.D.	FILTER												Container No.	Number of Containers	Remarks
50601	1026	C-1	X													5	
50601	1057	C-2	X													1	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
	50901	1030					
Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks	

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ______

Proj. No.	Project Title		SAMPLE TYPE (√)			Number of Containers	Remarks
G482801	LAKE HARTWELL						
SAMPLERS: (Signature)							
DATE	TIME	SAMPLE I.D.	FILTERS		Container No.		
50601	1115	C0	X			4	
50601	1057	C2	X			1	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
	50901	2200	Christy Burton				
Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks	

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ______

Proj. No.	Project Title		SAMPLE TYPE (√)		
G-482801	LAKE HARTWELL				

SAMPLERS: (Signature)

DATE	TIME	SAMPLE I.D.	FILTER	Container No.	Number of Containers	Remarks
50601	1520	C-3	X		5	
50601	1145	C-0	X		1	

Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
	50901	2230					
Relinquished by: (Signature)	Date/Time		Received by: (Signature)	Relinquished by: (Signature)	Date/Time		Received by: (Signature)
Relinquished by: (Signature)	Date/Time		Received for Laboratory by: (Signature)	Date/Time		Remarks	

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Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ______

Proj. No.	Project Title	
G482801	LAKE HARTWELL	

SAMPLERS: (Signature) J Abbott

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): PCB	Container No.	Number of Containers	Remarks
5/8/01	1439	T-I-B	X		20	
5/8/01	1419	T-I-A	X		20	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
J Abbott	5/9/01 1125	Christy Benton			

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

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Battelle
Columbus Laboratories

Form No. ____

CHAIN OF CUSTODY RECORD

Proj. No.	Project Title
G482801	LAKE HARTWELL

SAMPLERS: (Signature) J Abbott

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): TOC/PSD	Container No.	Number of Containers	Remarks
5/7/01	1311	T-O-A	X		19	
5/7/01	1510	T-O-C	X		20	
5/7/01	1400	T-O-B	X		15	
5/8/01	1035	T-L-A	X		20	
5/7/01	1715	T-L-B	X		20	
5/7/01	1635	T-L-C	X		20	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
J Abbott	5/9/01 2017	Kristy Burton			
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

Battelle
Columbus Laboratories

CHAIN OF CUSTODY RECORD

Form No. ______

Proj. No.	Project Title
G482801	LAKE HARTWELL

SAMPLERS: (Signature) J Abbott

DATE	TIME	SAMPLE I.D.	SAMPLE TYPE (√): TOC/PSD	Container No.	Number of Containers	Remarks
✓5/8/01	1439	T-I-B	X		20	
✓5/8/01	1419	T-I-A	X		20	
✓5/6/01	1145	C-0	X		2	a+b
✓5/6/01	1026	C-1	X		2	"
✓5/6/01	1057	C-2	X		2	"
✓5/6/01	1520	C-3	X		2	"
✓5/6/01	1436	C-4	X		2	"
✓5/6/01	1615	C-5	X		2	"
✓5/6/01	1739	C-6	X		2	"
		~~C~~ JEA				
✓5/9/01	1113	C3-C-1	X		1	
✓5/9/01	1113	C3-D-1	X		1	
✓5/9/01	1012	C1-D	X		1	
✓5/9/01	1012	C1-C	X		1	
✓5/9/01	1215	C6-C-1	X		1	
✓5/9/01	1215	C6-D-1	X		1	
✓5/9/01	1215	C6-D-2	X		1	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
J Abbott	5/9/01 1830	Cindy Burton			
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

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APPENDIX B

^{210}Pb, ^{137}Cs, PSD MOISTURE CONTENT, AND TOC ANALYTICAL RESULTS

Battelle Marine Sciences Laboratory
1529 West Sequim Bay Rd.
Sequim, WA 98382
(360) 683-4151

6/17/2003

Pb-210 Final Results

PROJECT: 1660

BATTELLE CODE	SPONSOR ID	Depth (cm)	Sample Wt. (g dry wt.)	*ACTIVITY Pb210 dpm/g*	RPD (%)	
BLANK	N/A	N/A	3.000	0.000		
BLANK SPIKE	N/A	N/A	3.000	0.000		
CHECK STD	N/A	N/A	3.000	9.77	2%	*
1660*1 R1	T-L-A-1	0-5	2.996	8.92		
1660*1 R1	T-L-A-1	0-5	2.999	10.14	13%	@
1660*2	T-L-A-2	5-10	2.999	9.79		
1660*3	T-L-A-3	10-15	2.998	8.29		
1660*4	T-L-A-4	15-20	3.001	9.88		
1660*5	T-L-A-5	20-25	2.999	8.05		
1660*6	T-L-A-6	25-30	2.996	7.39		
1660*7	T-L-A-7	30-35	2.996	5.46		
1660*8	T-L-A-8	35-40	2.998	4.15		
1660*9	T-L-A-9	40-45	3.003	2.12		
1660*10	T-L-A-10	45-50	2.999	1.13		
1660*11	T-L-A-11	50-55	2.995	1.08		
1660*12	T-L-A-12	55-60	3.003	1.43		
1660*13	T-L-A-13	60-65	3.005	1.40		
1660*14	T-L-A-14	65-70	2.995	2.88		
1660*15	T-L-A-15	70-75	2.997	3.40		
1660*16	T-L-A-16	75-80	3.000	3.12		
1660*17	T-L-A-17	80-85	2.999	3.69		
1660*18	T-L-A-18	85-90	3.002	3.09		
1660*19	T-L-A-19	90-95	3.002	2.04		
1660*20	T-L-A-20	95-100	3.005	1.23		
BLANK	N/A	N/A	3.000	0.000		
BLANK SPIKE	N/A	N/A	3.000	0.000		
CHECK STD	N/A	N/A	2.998	11.90	19%	*
BLANK	N/A	N/A	3.000	0.00		
BLANK SPIKE	N/A	N/A	3.000	0.00		
1660*21	T-L-B-1	0-5	2.997	11.79		
1660*22 R1	T-L-B-2	5-10	2.999	11.12		
1660*22 R2	T-L-B-2	5-10	3.000	10.37	7%	@
1660*23	T-L-B-3	10-15	3.004	7.68		
1660*24	T-L-B-4	15-20	3.005	5.58		
1660*25	T-L-B-5	20-25	2.995	6.19		
1660*26	T-L-B-6	25-30	2.998	5.85		
1660*27	T-L-B-7	30-35	2.998	6.60		
1660*28	T-L-B-8	35-40	3.005	7.82		
1660*29	T-L-B-9	40-45	2.997	6.58		
1660*30	T-L-B-10	45-50	2.997	6.83		
1660*31	T-L-B-11	50-55	3.004	6.11		
1660*32	T-L-B-12	55-60	2.997	6.04		
1660*33	T-L-B-13	60-65	2.996	4.19		
1660*34	T-L-B-14	65-70	2.995	4.07		
1660*35	T-L-B-15	70-75	3.000	4.82		
1660*36	T-L-B-16	75-80	2.999	3.93		
1660*37	T-L-B-17	80-85	2.997	3.91		
1660*38	T-L-B-18	85-90	2.999	5.11		
1660*39	T-L-B-19	90-95	3.000	5.71		
1660*40	T-L-B-20	95-100	3.001	3.70		

Pb-210 Final Results

PROJECT: 1660

BATTELLE CODE	SPONSOR ID	Depth (cm)	Sample Wt. (g dry wt.)	*ACTIVITY Pb210 dpm/g*	RPD (%)	
BLANK	N/A		3.000	0.00		
BLANK SPIKE	N/A		3.000	0.00		
CHECK STD	N/A		2.996	9.03	9%	*
1660*41 R1	T-L-C-1	0-5	2.999	7.70		
1660*41 R2	T-L-C-1	0-5	2.998	6.91	11%	@
1660*42	T-L-C-2	5-10	3.002	6.92		
1660*43	T-L-C-3	10-15	2.998	6.70		
1660*44	T-L-C-4	15-20	3.000	6.05		
1660*45	T-L-C-5	20-25	2.997	4.82		
1660*46	T-L-C-6	25-30	3.001	4.73		
1660*47	T-L-C-7	30-35	3.000	4.59		
1660*48	T-L-C-8	35-40	2.998	4.26		
1660*49	T-L-C-9	40-45	3.001	4.93		
1660*50	T-L-C-10	45-50	3.005	5.23		
1660*51	T-L-C-11	50-55	2.997	7.23		
1660*52	T-L-C-12	55-60	2.998	7.31		
1660*53	T-L-C-13	60-65	2.995	7.31		
1660*54	T-L-C-14	65-70	3.003	6.11		
1660*55	T-L-C-15	70-75	3.005	6.84		
1660*56	T-L-C-16	75-80	2.998	4.72		
1660*57	T-L-C-17	80-85	2.996	2.41		
1660*58	T-L-C-18	85-90	3.002	3.24		
1660*59	T-L-C-19	90-95	3.004	4.17		
1660*60 R1	T-L-C-20	95-100	2.997	4.22		
1660*60 R2	T-L-C-20	95-100	2.995	4.57	8%	@
BLANK	N/A		3.000	0.00		
BLANK SPIKE	N/A		3.000	0.00		
CHECK STD	N/A		2.995	12.03	21%	*
CHECK STD	N/A		2.997	11.72	18%	*
1660*62	T-O-A-2	5-10	3.005	6.29		
1660*63	T-O-A-3	10-15	2.995	5.60		
1660*64	T-O-A-4	15-20	2.996	6.79		
1660*65	T-O-A-5	20-25	2.997	5.58		
1660*66	T-O-A-6	25-30	3.000	5.62		
1660*67	T-O-A-7	30-35	3.005	3.72		
1660*68	T-O-A-8	35-40	2.998	4.88		
1660*69	T-O-A-9	40-45	2.999	3.28		
1660*70	T-O-A-10	45-50	3.003	2.36		
1660*71	T-O-A-11	50-55	2.997	3.35		
1660*72	T-O-A-12	55-60	2.996	3.31		
1660*73	T-O-A-13	60-65	3.002	4.66		
1660*74	T-O-A-14	65-70	3.005	2.73		
1660*75	T-O-A-15	70-75	3.000	3.90		
1660*76	T-O-A-16	75-80	2.999	3.37		
1660*77	T-O-A-17	80-85	2.995	2.25		
1660*78	T-O-A-18	85-90	3.001	3.24		
1660*79	T-O-A-19	90-95	3.005	2.22		
1660*80	T-O-A-20	95-100	3.001	2.24		
BLANK	N/A		3.000	0.00		
BLANK SPIKE	N/A		3.000	0.00		
CHECK STD	N/A		3.000	11.61	16%	*

Pb-210 Final Results

PROJECT: 1660

BATTELLE CODE	SPONSOR ID	Depth (cm)	Sample Wt. (g dry wt.)	*ACTIVITY Pb210 dpm/g*	RPD (%)	
1660*81	T-O-B-1	0-5	3.000	4.10		
1660*82	T-O-B-2	5-10	2.997	5.19		
1660*83	T-O-B-3	10-15	2.999	5.84		
1660*84	T-O-B-4	15-20	3.002	4.87		
1660*85	T-O-B-5	20-25	3.004	4.83		
1660*86	T-O-B-6	25-30	3.005	4.93		
1660*87	T-O-B-7	30-35	2.998	5.54		
1660*88	T-O-B-8	35-40	3.004	6.36		
1660*89	T-O-B-9	40-45	3.005	3.82		
1660*90	T-O-B-10	45-50	3.001	1.01		
1660*91	T-O-B-11	50-55	2.998	0.62		
1660*92	T-O-B-13	60-65	2.999	0.53		
1660*93	T-O-B-15	70-75	2.995	0.24		
1660*94	T-O-B-17	80-85	2.998	0.52		
1660*95	T-O-B-19	90-95	2.999	0.20		
1660*96	T-O-C-1	0-5	2.997	5.87		
1660*97 R1	T-O-C-2	5-10	2.999	2.48		
1660*97 R2	T-O-C-2	5-10	3.002	2.81	12%	@
1660*98	T-O-C-3	10-15	2.995	2.68		
1660*99	T-O-C-4	15-20	2.995	4.59		
1660*100	T-O-C-5	20-25	3.001	6.85		
1660*101	T-O-C-6	25-30	3.000	6.84		
1660*102	T-O-C-7	30-35	2.999	6.63		
1660*103	T-O-C-8	35-40	3.000	5.51		
1660*104	T-O-C-9	40-45	2.995	5.10		
1660*105	T-O-C-10	45-50	2.997	5.13		
1660*106	T-O-C-11	50-55	3.004	4.24		
1660*107	T-O-C-12	55-60	2.998	4.19		
1660*108	T-O-C-13	60-65	2.996	4.19		
1660*109	T-O-C-14	65-70	3.000	5.36		
1660*110	T-O-C-15	70-75	3.001	4.40		
1660*111	T-O-C-16	75-80	2.997	3.62		
1660*112 R1	T-O-C-17	80-85	3.000	1.46		
1660*112 R2	T-O-C-17	80-85	3.000	0.83	55%	@
1660*113	T-O-C-18	85-90	3.004	0.40		
1660*114	T-O-C-19	90-95	2.998	2.68		
1660*115	T-O-C-20	95-100	2.999	0.91		
BLANK	N/A		3.000	0.00		
BLANK SPIKE	N/A		3.000	0.00		
CHECK STD	N/A		3.001	10.76	8%	*

Pb-210 Final Results

PROJECT: 1660

BATTELLE CODE	SPONSOR ID	Depth (cm)	Sample Wt. (g dry wt.)	*ACTIVITY Pb210 dpm/g*	RPD (%)	
1660*116	T- I -B-1	0-5	2.997	12.10		
1660*117	T- I -B-2	5-10	3.005	8.50		
1660*118	T- I -B-3	10-15	3.005	9.26		
1660*119	T- I -B-4	15-20	2.996	8.79		
1660*120	T- I -B-5	20-25	3.003	6.99		
1660*121	T- I -B-6	25-30	3.000	3.42		
1660*122	T- I -B-7	30-35	3.000	3.46		
1660*123	T- I -B-8	35-40	3.002	3.32		
1660*124	T- I -B-9	40-45	2.995	2.27		
1660*125	T- I -B-10	45-50	2.995	2.23		
1660*126	T- I -B-11	50-55	3.001	2.07		
1660*127	T- I -B-12	55-60	3.002	2.73		
1660*128	T- I -B-13	60-65	3.005	3.00		
1660*129	T- I -B-14	65-70	3.000	4.06		
1660*130	T- I -B-15	70-75	3.005	4.23		
1660*131	T- I -B-16	75-80	2.999	4.52		
1660*132	T- I -B-17	80-85	3.003	4.13		
1660*133	T- I -B-18	85-90	3.002	3.50		
1660*134	T- I -B-19	90-95	3.003	3.27		
1660*135 R1	T- I -B-20	95-100	2.996	3.65		
1660*135 R2	T- I -B-20	95-100	2.998	2.74	28%	@
BLANK	N/A		3.000	0.00		
BLANK SPIKE	N/A		3.000	0.00		
CHECK STD	N/A		3.005	12.08	21%	*
1660*136	T- I -A-1	0-5	3.003	10.49		
1660*137	T- I -A-2	5-10	2.995	7.22		
1660*138	T- I -A-3	10-15	2.996	7.78		
1660*139	T- I -A-4	15-20	3.001	7.73		
1660*140	T- I -A-5	20-25	2.999	2.61		
1660*141	T- I -A-6	25-30	3.002	2.73		
1660*142	T- I -A-7	30-35	2.999	3.80		
1660*143	T- I -A-8	35-40	2.998	4.33		
1660*144	T- I -A-9	40-45	2.997	5.36		
1660*145	T- I -A-10	45-50	3.005	5.45		
1660*146	T- I -A-11	50-55	2.998	2.10		
1660*147	T- I -A-12	55-60	2.999	2.62		
1660*148	T- I -A-13	60-65	2.999	2.77		
1660*149	T- I -A-14	65-70	2.998	4.42		
1660*150 R1	T- I -A-15	70-75	3.000	2.36		
1660*150 R2	T- I -A-15	70-75	2.997	4.70	66%	@
1660*151	T- I -A-16	75-80	2.997	3.87		
1660*152	T- I -A-17	80-85	3.000	4.74		
1660*153	T- I -A-18	85-90	3.001	2.15		
1660*154	T- I -A-19	90-95	2.998	3.33		
1660*155	T- I -A-20	95-100	3.003	2.07		
BLANK	N/A		3.000	0.00		
BLANK SPIKE	N/A		3.000	0.00		
CHECK STD	N/A		2.998	8.29	17%	*

Battelle Marine Sciences Laboratory
1529 West Sequim Bay Rd.
Sequim, WA 98382
(360) 683-4151

6/17/2003

Pb-210 Final Results

PROJECT: 1660

BATTELLE CODE	SPONSOR ID	Depth (cm)	Sample Wt. (g dry wt.)	*ACTIVITY Pb210 dpm/g*	RPD (%)	
BLANK	N/A	N/A	3.000	0.000		
BLANK SPIKE	N/A	N/A	3.000	0.000		
CHECK STD	N/A	N/A	3.000	9.77	2%	*
1660*1 R1	T-L-A-1	0-5	2.996	8.92		
1660*1 R1	T-L-A-1	0-5	2.999	10.14	13%	@
1660*2	T-L-A-2	5-10	2.999	9.79		
1660*3	T-L-A-3	10-15	2.998	8.29		
1660*4	T-L-A-4	15-20	3.001	9.88		
1660*5	T-L-A-5	20-25	2.999	8.05		
1660*6	T-L-A-6	25-30	2.996	7.39		
1660*7	T-L-A-7	30-35	2.996	5.46		
1660*8	T-L-A-8	35-40	2.998	4.15		
1660*9	T-L-A-9	40-45	3.003	2.12		
1660*10	T-L-A-10	45-50	2.999	1.13		
1660*11	T-L-A-11	50-55	2.995	1.08		
1660*12	T-L-A-12	55-60	3.003	1.43		
1660*13	T-L-A-13	60-65	3.005	1.40		
1660*14	T-L-A-14	65-70	2.995	2.88		
1660*15	T-L-A-15	70-75	2.997	3.40		
1660*16	T-L-A-16	75-80	3.000	3.12		
1660*17	T-L-A-17	80-85	2.999	3.69		
1660*18	T-L-A-18	85-90	3.002	3.09		
1660*19	T-L-A-19	90-95	3.002	2.04		
1660*20	T-L-A-20	95-100	3.005	1.23		
BLANK	N/A	N/A	3.000	0.000		
BLANK SPIKE	N/A	N/A	3.000	0.000		
CHECK STD	N/A	N/A	2.998	11.90	19%	*
BLANK	N/A	N/A	3.000	0.00		
BLANK SPIKE	N/A	N/A	3.000	0.00		
1660*21	T-L-B-1	0-5	2.997	11.79		
1660*22 R1	T-L-B-2	5-10	2.999	11.12		
1660*22 R2	T-L-B-2	5-10	3.000	10.37	7%	@
1660*23	T-L-B-3	10-15	3.004	7.68		
1660*24	T-L-B-4	15-20	3.005	5.58		
1660*25	T-L-B-5	20-25	2.995	6.19		
1660*26	T-L-B-6	25-30	2.998	5.85		
1660*27	T-L-B-7	30-35	2.998	6.60		
1660*28	T-L-B-8	35-40	3.005	7.82		
1660*29	T-L-B-9	40-45	2.997	6.58		
1660*30	T-L-B-10	45-50	2.997	6.83		
1660*31	T-L-B-11	50-55	3.004	6.11		
1660*32	T-L-B-12	55-60	2.997	6.04		
1660*33	T-L-B-13	60-65	2.996	4.19		
1660*34	T-L-B-14	65-70	2.995	4.07		
1660*35	T-L-B-15	70-75	3.000	4.82		
1660*36	T-L-B-16	75-80	2.999	3.93		
1660*37	T-L-B-17	80-85	2.997	3.91		
1660*38	T-L-B-18	85-90	2.999	5.11		
1660*39	T-L-B-19	90-95	3.000	5.71		
1660*40	T-L-B-20	95-100	3.001	3.70		

6/17/2003

Pb-210 Final Results

PROJECT: 1660

BATTELLE CODE	SPONSOR ID	Depth (cm)	Sample Wt. (g dry wt.)	*ACTIVITY Pb210 dpm/g*	RPD (%)	
BLANK	N/A		3.000	0.00		
BLANK SPIKE	N/A		3.000	0.00		
CHECK STD	N/A		2.996	9.03	9%	*
1660*41 R1	T-L-C-1	0-5	2.999	7.70		
1660*41 R2	T-L-C-1	0-5	2.998	6.91	11%	@
1660*42	T-L-C-2	5-10	3.002	6.92		
1660*43	T-L-C-3	10-15	2.998	6.70		
1660*44	T-L-C-4	15-20	3.000	6.05		
1660*45	T-L-C-5	20-25	2.997	4.82		
1660*46	T-L-C-6	25-30	3.001	4.73		
1660*47	T-L-C-7	30-35	3.000	4.59		
1660*48	T-L-C-8	35-40	2.998	4.26		
1660*49	T-L-C-9	40-45	3.001	4.93		
1660*50	T-L-C-10	45-50	3.005	5.23		
1660*51	T-L-C-11	50-55	2.997	7.23		
1660*52	T-L-C-12	55-60	2.998	7.31		
1660*53	T-L-C-13	60-65	2.995	7.31		
1660*54	T-L-C-14	65-70	3.003	6.11		
1660*55	T-L-C-15	70-75	3.005	6.84		
1660*56	T-L-C-16	75-80	2.998	4.72		
1660*57	T-L-C-17	80-85	2.996	2.41		
1660*58	T-L-C-18	85-90	3.002	3.24		
1660*59	T-L-C-19	90-95	3.004	4.17		
1660*60 R1	T-L-C-20	95-100	2.997	4.22		
1660*60 R2	T-L-C-20	95-100	2.995	4.57	8%	@
BLANK	N/A		3.000	0.00		
BLANK SPIKE	N/A		3.000	0.00		
CHECK STD	N/A		2.995	12.03	21%	*
CHECK STD	N/A		2.997	11.72	18%	*
1660*62	T-O-A-2	5-10	3.005	6.29		
1660*63	T-O-A-3	10-15	2.995	5.60		
1660*64	T-O-A-4	15-20	2.996	6.79		
1660*65	T-O-A-5	20-25	2.997	5.58		
1660*66	T-O-A-6	25-30	3.000	5.62		
1660*67	T-O-A-7	30-35	3.005	3.72		
1660*68	T-O-A-8	35-40	2.998	4.88		
1660*69	T-O-A-9	40-45	2.999	3.28		
1660*70	T-O-A-10	45-50	3.003	2.36		
1660*71	T-O-A-11	50-55	2.997	3.35		
1660*72	T-O-A-12	55-60	2.996	3.31		
1660*73	T-O-A-13	60-65	3.002	4.66		
1660*74	T-O-A-14	65-70	3.005	2.73		
1660*75	T-O-A-15	70-75	3.000	3.90		
1660*76	T-O-A-16	75-80	2.999	3.37		
1660*77	T-O-A-17	80-85	2.995	2.25		
1660*78	T-O-A-18	85-90	3.001	3.24		
1660*79	T-O-A-19	90-95	3.005	2.22		
1660*80	T-O-A-20	95-100	3.001	2.24		
BLANK	N/A		3.000	0.00		
BLANK SPIKE	N/A		3.000	0.00		
CHECK STD	N/A		3.000	11.61	16%	*

Pb-210 Final Results

PROJECT: 1660

BATTELLE CODE	SPONSOR ID	Depth (cm)	Sample Wt. (g dry wt.)	ACTIVITY Pb210 dpm/g	RPD (%)	
1660*81	T-O-B-1	0-5	3.000	4.10		
1660*82	T-O-B-2	5-10	2.997	5.19		
1660*83	T-O-B-3	10-15	2.999	5.84		
1660*84	T-O-B-4	15-20	3.002	4.87		
1660*85	T-O-B-5	20-25	3.004	4.83		
1660*86	T-O-B-6	25-30	3.005	4.93		
1660*87	T-O-B-7	30-35	2.998	5.54		
1660*88	T-O-B-8	35-40	3.004	6.36		
1660*89	T-O-B-9	40-45	3.005	3.82		
1660*90	T-O-B-10	45-50	3.001	1.01		
1660*91	T-O-B-11	50-55	2.998	0.62		
1660*92	T-O-B-13	60-65	2.999	0.53		
1660*93	T-O-B-15	70-75	2.995	0.24		
1660*94	T-O-B-17	80-85	2.998	0.52		
1660*95	T-O-B-19	90-95	2.999	0.20		
1660*96	T-O-C-1	0-5	2.997	5.87		
1660*97 R1	T-O-C-2	5-10	2.999	2.48		
1660*97 R2	T-O-C-2	5-10	3.002	2.81	12%	@
1660*98	T-O-C-3	10-15	2.995	2.68		
1660*99	T-O-C-4	15-20	2.995	4.59		
1660*100	T-O-C-5	20-25	3.001	6.85		
1660*101	T-O-C-6	25-30	3.000	6.84		
1660*102	T-O-C-7	30-35	2.999	6.63		
1660*103	T-O-C-8	35-40	3.000	5.51		
1660*104	T-O-C-9	40-45	2.995	5.10		
1660*105	T-O-C-10	45-50	2.997	5.13		
1660*106	T-O-C-11	50-55	3.004	4.24		
1660*107	T-O-C-12	55-60	2.998	4.19		
1660*108	T-O-C-13	60-65	2.996	4.19		
1660*109	T-O-C-14	65-70	3.000	5.36		
1660*110	T-O-C-15	70-75	3.001	4.40		
1660*111	T-O-C-16	75-80	2.997	3.62		
1660*112 R1	T-O-C-17	80-85	3.000	1.46		
1660*112 R2	T-O-C-17	80-85	3.000	0.83	55%	@
1660*113	T-O-C-18	85-90	3.004	0.40		
1660*114	T-O-C-19	90-95	2.998	2.68		
1660*115	T-O-C-20	95-100	2.999	0.91		
BLANK	N/A		3.000	0.00		
BLANK SPIKE	N/A		3.000	0.00		
CHECK STD	N/A		3.001	10.76	8%	*

Pb-210 Final Results

PROJECT: 1660

BATTELLE CODE	SPONSOR ID	Depth (cm)	Sample Wt. (g dry wt.)	*ACTIVITY Pb210 dpm/g*	RPD (%)	
1660*116	T- I -B-1	0-5	2.997	12.10		
1660*117	T- I -B-2	5-10	3.005	8.50		
1660*118	T- I -B-3	10-15	3.005	9.26		
1660*119	T- I -B-4	15-20	2.996	8.79		
1660*120	T- I -B-5	20-25	3.003	6.99		
1660*121	T- I -B-6	25-30	3.000	3.42		
1660*122	T- I -B-7	30-35	3.000	3.46		
1660*123	T- I -B-8	35-40	3.002	3.32		
1660*124	T- I -B-9	40-45	2.995	2.27		
1660*125	T- I -B-10	45-50	2.995	2.23		
1660*126	T- I -B-11	50-55	3.001	2.07		
1660*127	T- I -B-12	55-60	3.002	2.73		
1660*128	T- I -B-13	60-65	3.005	3.00		
1660*129	T- I -B-14	65-70	3.000	4.06		
1660*130	T- I -B-15	70-75	3.005	4.23		
1660*131	T- I -B-16	75-80	2.999	4.52		
1660*132	T- I -B-17	80-85	3.003	4.13		
1660*133	T- I -B-18	85-90	3.002	3.50		
1660*134	T- I -B-19	90-95	3.003	3.27		
1660*135 R1	T- I -B-20	95-100	2.996	3.65		
1660*135 R2	T- I -B-20	95-100	2.998	2.74	28%	@
BLANK	N/A		3.000	0.00		
BLANK SPIKE	N/A		3.000	0.00		
CHECK STD	N/A		3.005	12.08	21%	*
1660*136	T- I -A-1	0-5	3.003	10.49		
1660*137	T- I -A-2	5-10	2.995	7.22		
1660*138	T- I -A-3	10-15	2.996	7.78		
1660*139	T- I -A-4	15-20	3.001	7.73		
1660*140	T- I -A-5	20-25	2.999	2.61		
1660*141	T- I -A-6	25-30	3.002	2.73		
1660*142	T- I -A-7	30-35	2.999	3.80		
1660*143	T- I -A-8	35-40	2.998	4.33		
1660*144	T- I -A-9	40-45	2.997	5.36		
1660*145	T- I -A-10	45-50	3.005	5.45		
1660*146	T- I -A-11	50-55	2.998	2.10		
1660*147	T- I -A-12	55-60	2.999	2.62		
1660*148	T- I -A-13	60-65	2.999	2.77		
1660*149	T- I -A-14	65-70	2.998	4.42		
1660*150 R1	T- I -A-15	70-75	3.000	2.36		
1660*150 R2	T- I -A-15	70-75	2.997	4.70	66%	@
1660*151	T- I -A-16	75-80	2.997	3.87		
1660*152	T- I -A-17	80-85	3.000	4.74		
1660*153	T- I -A-18	85-90	3.001	2.15		
1660*154	T- I -A-19	90-95	2.998	3.33		
1660*155	T- I -A-20	95-100	3.003	2.07		
BLANK	N/A		3.000	0.00		
BLANK SPIKE	N/A		3.000	0.00		
CHECK STD	N/A		2.998	8.29	17%	*

Moisture Content and Particle Size Distribution for Surface Sediment Samples

Sample ID	Moisture Content (%)	% Gravel (> 2 mm)	% Sand (2 mm -.0625 mm)	% Silt (62.5 micron- 4 micron)	% Clay (< 4 micron)
C-4-B	83	1	48	33	18
C-4-A	114	17	47	15	21
C-5-B	114	0	57	29	14
C-6-D-1	54	1	75	15	9
C-O-B	52	0	83	12	5
C-5-A	76	0	84	11	5
C-2-B	44	0	87	10	3
C-1-C	26	1	94	3	2
C-3-C-1	17	8	89	3	0
C-3-D-1	23	5	92	2	1
C-6-C-1	33	1	97	2	0
C-1-B	25	0	98	1	1
C-2-A	29	0	98	2	0
C-3-A	24	0	98	2	0
C-6-A	22	10	89	1	0
C-3-B	27	8	91	1	0
C-6-B	22	4	95	1	0
C-1-A	23	3	96	1	0
C-1-D	24	1	98	1	0
C-O-A	26	1	99	0	0
C-6-D-2	26	1	99	0	0

Moisture Content and Particle Size Distribution for T-O-A

Sample ID	Moisture Content (%)	% Gravel (> 2 mm)	(2 mm -.0625 mm)	% Silt (62.5 micron- 4 micron)	% Clay (< 4 micron)
T-O-A-2	147	0	24	59	17
T-O-A-3	132	0	27	52	21
T-O-A-4	148	0	22	56	22
T-O-A-5	154	1	16	57	26
T-O-A-6	94	1	33	45	21
T-O-A-7	69	2	52	30	16
T-O-A-8	84	0	51	32	17
T-O-A-9	83	0	45	39	16
T-O-A-10	53	0	65	22	13
T-O-A-11	81	0	45	33	22
T-O-A-12	96	1	36	40	23
T-O-A-13	76	0	41	34	25
T-O-A-14	64	0	57	24	19
T-O-A-15	82	1	43	35	21
T-O-A-16	74	0	46	35	19
T-O-A-17	41	0	62	22	16
T-O-A-18	42	0	49	32	19
T-O-A-19	34	0	64	21	15
T-O-A-20	31	0	78	12	10

Moisture Content and Particle Size Distribution for T-O-B

Sample ID	Moisture Content (%)	% Gravel (> 2 mm)	% Sand (2 mm -.0625 mm)	% Silt (62.5 micron- 4 micron)	% Clay (< 4 micron)
T-O-B-1	189	1	62	26	11
T-O-B-3	115	1	59	33	7
T-O-B-4	146	6	70	13	11
T-O-B-5	130	6	78	11	5
T-O-B-6	112	3	95	8	11
T-O-B-7	125	0	48	39	13
T-O-B-8	129	1	23	50	26
T-O-B-9	65	3	56	24	17
T-O-B-10	33	7	80	4	9
T-O-B-11	25	7	76	17	0
T-O-B-13	21	12	81	5	2
T-O-B-15	20	6	93	1	0
T-O-B-17	11	16	83	1	0
T-O-B-19	15	12	86	2	0

Moisture Content and Particle Size Distribution for T-O-C

Sample ID	Moisture Content (%)	% Gravel (> 2 mm)	% Sand (2 mm -.0625 mm)	(62.5 micron- 4 micron)	% Clay (< 4 micron)
T-O-C-2	85	0	67	22	11
T-O-C-3	67	0	69	21	10
T-O-C-4	107	0	45	37	18
T-O-C-5	132	0	25	53	22
T-O-C-6	52	1	27	39	33
T-O-C-7	130	0	34	46	20
T-O-C-8	117	3	56	28	13
T-O-C-9	117	1	38	42	19
T-O-C-10	112	2	50	29	19
T-O-C-11	110	2	49	28	21
T-O-C-12	75	0	60	29	11
T-O-C-13	96	0	42	36	22
T-O-C-14	114	0	16	52	32
T-O-C-15	84	0	41	31	28
T-O-C-16	64	0	50	33	17
T-O-C-17	46	1	76	9	14
T-O-C-18	25	0	98	0	2
T-O-C-19	55	0	66	20	14
T-O-C-20	32	0	86	6	8

Moisture Content and Particle Size Distribution for T-L-A

Sample ID	Moisture Content (%)	% Gravel (> 2 mm)	% Sand (2 mm -.0625 mm)	% Silt (62.5 micron- 4 micron)	% Clay (< 4 micron)
T-L-A-1	127	0	10	44	46
T-L-A-2	187	0	5	7	88
T-L-A-3	164	0	6	57	37
T-L-A-4	164	0	7	47	46
T-L-A-5	138	0	11	58	31
T-L-A-6	119	0	13	32	55
T-L-A-7	264	0	8	84	8
T-L-A-8	99	1	45	28	26
T-L-A-9	46	0	77	15	8
T-L-A-10	27	0	93	5	2
T-L-A-11	27	0	93	4	3
T-L-A-12	25	0	93	6	1
T-L-A-13	29	0	79	12	9
T-L-A-14	43	0	42	33	25
T-L-A-15	47	0	31	40	29
T-L-A-16	48	0	29	38	33
T-L-A-17	44	1	28	37	34
T-L-A-18	39	4	30	36	30
T-L-A-19	34	2	52	23	23
T-L-A-20	25	10	65	9	16

Moisture Content and Particle Size Distribution for T-L-B

Sample ID	Moisture Content (%)	% Gravel (> 2 mm)	% Sand (2 mm -.0625 mm)	% Silt (62.5 micron- 4 micron)	% Clay (< 4 micron)
T-L-B-1	254	0	6	51	43
T-L-B-2	170	0	6	54	40
T-L-B-3	162	0	6	49	45
T-L-B-4	166	0	6	48	46
T-L-B-5	139	0	10	50	40
T-L-B-6	125	0	17	41	42
T-L-B-7	114	0	21	40	39
T-L-B-8	121	0	16	46	38
T-L-B-9	120	0	11	47	42
T-L-B-10	123	0	9	36	55
T-L-B-11	123	0	8	54	38
T-L-B-12	111	0	13	84	3
T-L-B-13	105	0	19	53	28
T-L-B-14	102	0	19	53	28
T-L-B-15	137	0	7	60	33
T-L-B-16	101	0	35	35	30
T-L-B-17	76	0	54	9	37
T-L-B-18	76	0	44	17	39
T-L-B-19	97	0	27	25	48
T-L-B-20	72	0	59	14	27

Moisture Content and Particle Size Distribution for T-L-C

Sample ID	Moisture Content (%)	% Gravel (> 2 mm)	% Sand (2 mm -.0625 mm)	% Silt (62.5 micron- 4 micron)	% Clay (< 4 micron)
T-L-C-1	279	0	11	56	33
T-L-C-2	192	0	6	53	41
T-L-C-3	169	0	5	41	54
T-L-C-4	151	1	6	46	47
T-L-C-5	126	0	11	60	29
T-L-C-6	110	0	19	56	25
T-L-C-7	132	0	38	39	23
T-L-C-8	111	0	55	27	18
T-L-C-9	99	0	24	52	24
T-L-C-10	117	0	7	53	40
T-L-C-11	135	0	1	37	62
T-L-C-12	136	0	2	27	71
T-L-C-13	127	0	2	37	61
T-L-C-14	108	0	1	38	61
T-L-C-15	132	0	2	24	74
T-L-C-16	103	0	14	27	59
T-L-C-17	67	0	56	20	24
T-L-C-18	62	1	53	30	16
T-L-C-19	61	1	19	48	32
T-L-C-20	51	3	21	45	31

Moisture Content and Particle Size Distribution for T-I-A

Sample ID	Moisture Content (%)	% Gravel (> 2 mm)	% Sand (2 mm -.0625 mm)	% Silt (62.5 micron- 4 micron)	% Clay (< 4 micron)
T-I-A-1	308	0	6	35	59
T-I-A-2	217	0	4	28	68
T-I-A-3	177	0	5	18	77
T-I-A-4	132	0	17	17	66
T-I-A-5	77	2	46	24	28
T-I-A-6	60	0	45	28	27
T-I-A-7	68	1	32	32	35
T-I-A-8	68	0	21	38	41
T-I-A-9	65	0	15	42	43
T-I-A-10	62	1	14	42	43
T-I-A-11	55	0	12	45	43
T-I-A-12	52	0	16	45	39
T-I-A-13	53	0	19	39	42
T-I-A-14	54	0	11	44	45
T-I-A-15	53	1	11	42	46
T-I-A-16	51	0	6	44	50
T-I-A-17	53	1	9	42	48
T-I-A-18	49	1	13	42	44
T-I-A-19	53	0	23	40	37
T-I-A-20	45	0	43	28	29

Moisture Content and Particle Size Distribution for T-I-B

Sample ID	Moisture Content (%)	% Gravel (> 2 mm)	% Sand (2 mm -.0625 mm)	% Silt (62.5 micron- 4 micron)	% Clay (< 4 micron)
T-I-B-1	284	0	5	30	65
T-I-B-2	234	0	5	26	69
T-I-B-3	174	0	4	17	79
T-I-B-4	136	0	13	14	73
T-I-B-5	80	1	49	20	30
T-I-B-6	64	1	42	30	27
T-I-B-7	62	0	44	28	28
T-I-B-8	41	0	74	11	15
T-I-B-9	38	0	68	18	14
T-I-B-10	37	0	70	18	12
T-I-B-11	35	0	64	19	17
T-I-B-12	47	0	47	26	27
T-I-B-13	45	0	49	29	22
T-I-B-14	50	0	20	44	36
T-I-B-15	50	0	26	43	31
T-I-B-16	52	1	20	44	35
T-I-B-17	47	0	24	43	33
T-I-B-18	53	0	27	42	31
T-I-B-19	51	0	41	37	22
T-I-B-20	51	0	43	32	25

Project ID: G482801-UC13 **Analyst:** C. BURTON
Date: 5/21/2001

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
C0-A	5/23/2001	88.22	88.19	0.100		
		96.19	89.08	0.093		
		64.97	66.24	0.102	**0.098**	**5.01**
C0-B	5/22/2001	49.38	606.09	1.23		
		50.21	696.26	1.39		
		52.44	678.91	1.29	**1.30**	**6.14**
C1-A	5/23/2001	98.68	56.69	0.057		
		73.07	47.02	0.064		
		75.99	46.69	0.061	**0.061**	**5.67**
C1-B	5/24/2001	76.55	93.30	0.12		
		65.51	78.82	0.12		
		73.59	107.16	0.15	**0.13**	**10.97**
C1-C	5/23/2001	85.66	275.82	0.32		
		74.04	205.91	0.28		
		85.62	232.33	0.27	**0.29**	**9.47**
C1-D	5/24/2001	75.37	57.80	0.077		
		70.97	37.93	0.053		
		99.25	51.50	0.052	**0.061**	**22.89**
C2-A	5/21/2001	70.29	61.68	0.09		
		63.45	46.96	0.07		
		69.45	58.17	0.08	**0.08**	**8.64**
C2-B	5/22/2001	61.18	471.22	0.77		
		46.71	316.34	0.68		
		72.06	544.96	0.76	**0.73**	**6.83**
C3-A	5/23/2001	82.32	55.41	0.067		
		107.66	65.37	0.061		
		76.94	45.87	0.060	**0.063**	**6.65**
C3-B	5/24/2001	73.56	76.44	0.104		
		96.96	93.70	0.097		
		81.15	91.81	0.113	**0.105**	**7.91**
C3-C-1	5/23/2001	91.11	44.85	0.049		
		79.59	38.00	0.048		
		102.04	61.86	0.061	**0.05**	**13.41**
C3-D-1	5/22/2001	83.80	36.78	0.044		
		94.63	33.72	0.036		
		85.78	35.85	0.042	**0.040**	**10.61**

Project ID: G482801-UC13 **Analyst:** C. BURTON
Date: 5/21/2001

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
C4-A	5/22/2001	53.03	720.60	1.36		
		56.25	775.57	1.38		
		57.57	893.74	1.55	**1.43**	**7.45**
C4-B	5/21/2001	41.65	429.53	1.03		
		32.36	345.82	1.07		
		46.25	464.20	1.00	**1.03**	**3.15**
C5-A	5/24/2001	64.64	483.89	0.75		
		53.00	353.05	0.67		
		69.05	498.77	0.72	**0.71**	**5.91**
C5-B	5/22/2001	38.92	797.80	2.05		
		40.04	850.18	2.12		
		44.73	921.16	2.06	**2.08**	**1.92**
C6-A	5/24/2001	90.19	28.24	0.031		
		99.43	31.31	0.031		
		95.80	30.24	0.032	**0.031**	**0.41**
C6-B	5/22/2001	89.32	35.80	0.040		
		89.75	38.29	0.043		
		92.65	44.87	0.048	**0.044**	**9.78**
C6-C-1	5/24/2001	63.64	104.68	0.16		
		67.32	105.85	0.16		
		71.79	140.78	0.20	**0.17**	**11.97**
C6-D-1	5/22/2001	64.19	825.11	1.29		
		72.58	931.03	1.28		
		60.84	722.63	1.19	**1.25**	**4.44**
C6-D-2	5/23/2001	91.99	28.47	0.031		
		64.88	50.00	0.077		
		69.27	21.30	0.031	**0.046**	**57.69**

Project ID: G482801-UC13 **Analyst:** C. BURTON
Date: 6/11/2001

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-O-A-2	6/12/2001	38.80	1299.65	3.35		
		34.46	1144.17	3.32		
		41.96	1419.60	3.38	**3.35**	**0.94**
T-O-A-3	6/18/2001	52.18	1683.06	3.23		
		34.90	1143.58	3.28		
		43.73	1399.73	3.20	**3.23**	**1.20**
T-O-A-4	6/12/2001	53.70	1848.80	3.44		
		42.05	1538.87	3.66		
		27.48	951.20	3.46	**3.52**	**3.41**
T-O-A-5	6/12/2001	32.01	924.27	2.89		
		41.48	1232.51	2.97		
		54.22	1542.54	2.84	**2.90**	**2.22**
T-O-A-6	6/18/2001	57.82	1318.24	2.28		
		53.89	1248.57	2.32		
		46.96	1118.91	2.38	**2.33**	**2.24**
T-O-A-7	6/18/2001	64.27	1047.91	1.63		
		54.78	940.72	1.72		
		52.10	923.45	1.77	**1.71**	**4.19**
T-O-A-8	6/18/2001	56.92	1315.05	2.31		
		54.47	1041.85	1.91		
		52.48	1061.13	2.02	**2.08**	**9.87**
T-O-A-9	6/18/2001	49.41	1100.42	2.23		
		49.09	1070.18	2.18		
		59.33	1292.61	2.18	**2.20**	**1.26**
T-O-A-10	6/18/2001	69.03	939.75	1.36		
		66.89	871.01	1.30		
		62.35	771.15	1.24	**1.30**	**4.79**
T-O-A-11	6/18/2001	50.68	1030.03	2.03		
		44.05	890.31	2.02		
		56.96	1126.13	1.98	**2.01**	**1.46**
T-O-A-12	6/18/2001	55.06	1428.52	2.59		
		44.85	1010.07	2.25		
		62.04	1579.72	2.55	**2.46**	**7.52**
T-O-A-13	6/11/2001	64.69	1242.59	1.92		
		61.79	1148.42	1.86		
		42.45	794.64	1.87	**1.88**	**1.74**

Project ID: G482801-UC13 **Analyst:** C. BURTON
Date:

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-O-A-14	6/12/2001	52.55	802.63	1.53		
		52.09	846.36	1.62		
		52.82	739.69	1.40	**1.52**	**7.42**
T-O-A-15	6/11/2001	54.29	934.25	1.72		
		50.23	876.20	1.74		
		42.72	763.31	1.79	**1.75**	**1.91**
T-O-A-16	6/12/2001	61.06	1044.28	1.71		
		49.65	906.78	1.83		
		36.54			**1.77**	**4.64**
T-O-A-17	6/11/2001	74.76	1131.31	1.51		
		71.47	1058.18	1.48		
		58.73	815.64	1.39	**1.46**	**4.42**
T-O-A-18	6/12/2001	48.78	972.78	1.99		
		46.77	938.06	2.01		
		57.89	1077.62	1.86	**1.95**	**4.10**
T-O-A-19	6/12/2001	62.87	889.41	1.41		
		54.85	650.68	1.19		
		54.66	669.25	1.22	**1.28**	**9.60**
T-O-A-20	6/18/2001	85.91	724.52	0.84		
		89.15	724.06	0.81		
		71.76	567.49	0.79	**0.82**	**3.24**

Project ID: G482801-UC13 **Analyst:** C. BURTON
Date: 6/20/2001

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-O-B-1	7/2/2001	34.75	1821.00	5.24		
		49.09	2491.21	5.07		
		31.51	1764.44	5.60	**5.30**	**5.06**
T-O-B-3	7/2/2001	48.47	2979.71	6.15		
		40.70	2827.67	6.95		
		40.29	2660.23	6.60	**6.57**	**6.11**
T-O-B-4	7/2/2001	58.60	4063.92	6.94		
		53.25	3800.38	7.14		
		48.33	4017.02	8.31	**7.46**	**9.96**
T-O-B-5	7/2/2001	60.56	3516.90	5.81		
		56.94	3400.65	5.97		
		38.22	2163.80	5.66	**5.81**	**2.68**
T-O-B-6	7/2/2001	51.35	2702.52	5.26		
		47.20	2780.40	5.89		
		64.29	3491.42	5.43	**5.53**	**5.88**
T-O-B-7	6/20/2001	35.78	1642.47	4.59		
		45.48	2112.80	4.65		
		43.98	2061.14	4.69	**4.64**	**1.04**
T-O-B-8	6/20/2001	40.83	1344.90	3.29		
		41.93	1418.26	3.38		
		38.60	1189.51	3.08	**3.25**	**4.75**
T-O-B-9	6/20/2001	65.72	1042.99	1.59		
		71.56	1019.23	1.42		
		65.04	1170.58	1.80	**1.60**	**11.74**
T-O-B-10	6/29/2001	91.01	824.82	0.91		
		63.33	629.79	0.99		
		87.75	856.99	0.98	**0.96**	**4.86**
T-O-B-11	7/2/2001	140.17	2481.58	1.77		
		112.71	1749.61	1.55		
		97.54	1736.39	1.78	**1.70**	**7.57**
T-O-B-13	6/20/2001	108.22	1022.66	0.94		
		117.24	1288.28	1.10		
		102.36	899.29	0.88	**0.97**	**11.60**
T-O-B-15	7/2/2001	108.81	65.19	0.060		
		134.00	91.94	0.069		
		128.73	85.24	0.066	**0.065**	**6.92**

Project ID: G482801-UC13 **Analyst:** C. BURTON
Date:

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-O-B-17	7/2/2001	109.79	34.24	0.031		
		124.82	39.69	0.032		
		119.63	41.52	0.035	**0.033**	**5.78**
T-O-B-19	7/2/2001	135.97	58.31	0.043		
		117.56	55.27	0.047		
		116.96	47.71	0.041	**0.044**	**7.27**

Project ID: G482801-UC13 **Analyst:** C. BURTON
Date: 7/2/2001

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-O-C-1	7/5/2001	38.34	1426.16	3.72		
		47.47	1790.30	3.77		
		42.92	1650.44	3.85	**3.78**	**1.67**
T-O-C-2	7/3/2001	72.76	1472.34	2.02		
		39.59	777.30	1.96		
		55.24	1052.93	1.91	**1.96**	**2.99**
T-O-C-3	7/10/2001	65.80	821.60	1.25		
		76.33	955.27	1.25		
		77.13	984.50	1.28	**1.26**	**1.21**
T-O-C-4	7/10/2001	53.70	1408.09	2.62		
		67.69	1718.77	2.54		
		52.96	1461.30	2.76	**2.64**	**4.21**
T-O-C-5	7/5/2001	41.66	1332.31	3.20		
		54.63	1856.10	3.40		
		50.29	1623.02	3.23	**3.27**	**3.29**
T-O-C-6	7/3/2001	37.47	1421.56	3.79		
		49.52	1880.14	3.80		
		36.92	1442.28	3.91	**3.83**	**1.68**
T-O-C-7	7/5/2001	48.72	2330.97	4.78		
		43.74	2061.17	4.71		
		43.03	2177.61	5.06	**4.85**	**3.79**
T-O-C-8	7/10/2001	42.93	2230.31	5.20		
		51.46	2600.88	5.05		
		54.66			**5.12**	**1.95**
T-O-C-9	7/5/2001	42.31	2059.69	4.87		
		41.76	1769.97	4.24		
		46.62	1968.17	4.22	**4.44**	**8.29**
T-O-C-10	7/5/2001	43.02	1887.26	4.39		
		45.19	1745.78	3.86		
		44.37	1527.14	3.44	**3.90**	**12.15**
T-O-C-11	7/5/2001	56.67	1987.59	3.51		
		52.05	2309.59	4.44		
		60.93	2126.31	3.49	**3.81**	**14.22**
T-O-C-12	7/5/2001	62.42	1255.27	2.01		
		57.91	1216.38	2.10		
		69.88	1474.40	2.11	**2.07**	**2.63**

Project ID: G482801-UC13 **Analyst:** C. BURTON
Date:

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-O-C-13	7/5/2001	57.90	1394.24	2.41		
		53.51	1322.31	2.47		
		50.21	1159.03	2.31	**2.40**	**3.43**
T-O-C-14	7/5/2001	43.20	1174.08	2.72		
		39.55	1134.81	2.87		
		46.41	1329.80	2.87	**2.82**	**3.07**
T-O-C-15	7/3/2001	54.34	1370.21	2.52		
		44.85	1039.17	2.32		
		45.34	1087.53	2.40	**2.41**	**4.27**
T-O-C-16	7/3/2001	59.19	1029.32	1.74		
		58.77	930.56	1.58		
		63.38	2086.98	3.29	**2.21**	**42.87**
T-O-C-17	7/3/2001	107.84	265.85	0.25		
		103.65	261.29	0.25		
		107.33	268.63	0.25	**0.25**	**1.14**
T-O-C-18	7/10/2001	93.05	76.79	0.083		
		104.65	73.92	0.071		
		77.76	51.41	0.066	**0.073**	**11.60**
T-O-C-19	7/5/2001	90.25	660.37	0.73		
		79.97	651.31	0.81		
		132.10	1082.67	0.82	**0.79**	**6.25**
T-O-C-20	7/3/2001	65.38	665.51	1.02		
		84.85	996.79	1.17		
		75.06	912.52	1.22	**1.14**	**9.19**

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Project ID: G482801-UC13 **Analyst:** C. BURTON
Date: 5/16/2001

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-L-A-1		43.40	1191.55	2.75		
	5/17/2001	33.08	899.19	2.72		
		41.32	1131.20	2.74	**2.73**	**0.51**
T-L-A-2	5/17/2001	46.63	1249.93	2.68		
		37.38	994.20	2.66		
		35.27	975.63	2.77	**2.70**	**2.09**
T-L-A-3	5/20/2001	44.82	1180.58	2.63		
		37.35	993.32	2.66		
		31.30	836.58	2.67	**2.66**	**0.74**
T-L-A-4	5/20/2001	42.71	1153.95	2.70		
		35.72	948.58	2.66		
		32.80	873.48	2.66	**2.67**	**0.93**
T-L-A-5	5/20/2001	30.46	806.91	2.65		
		33.26	891.98	2.68		
		37.00	1007.06	2.72	**2.68**	**1.36**
T-L-A-6	5/17/2001	23.24	636.61	2.74		
		31.85	794.25	2.49		
		45.74	1147.94	2.51	**2.58**	**5.32**
T-L-A-7	5/21/2001	45.48	962.67	2.12		
		46.62	988.98	2.12		
		46.34	978.81	2.11	**2.12**	**0.22**
T-L-A-8	5/17/2001	36.48	858.28	2.35		
		27.12	600.77	2.22		
		34.01	643.55	1.89	**2.15**	**10.98**
T-L-A-9	5/29/2001	56.23	480.33	0.85		
		66.14	620.23	0.94		
		50.95	439.17	0.86	**0.88**	**5.22**
T-L-A-10	5/29/2001	64.30	235.28	0.37		
		47.43	191.85	0.40		
		62.83	246.98	0.39	**0.39**	**5.11**
T-L-A-11	5/16/2001	67.07	176.11	0.26		
		65.84	171.81	0.26		
		62.92	157.67	0.25	**0.26**	**2.52**
T-L-A-12	5/21/2001	78.26	190.49	0.24		
		78.48	195.29	0.25		
		66.83	141.47	0.21	**0.23**	**8.55**

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Project ID: G482801-UC13 **Analyst:** C. BURTON
Date: 5/16/2001

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-L-A-13	5/20/2001	59.53	345.33	0.58		
		61.91	370.82	0.60		
		80.42	451.12	0.56	**0.58**	**3.28**
T-L-A-14	5/21/2001	45.69	530.64	1.16		
		40.10	457.67	1.14		
		51.16	594.99	1.16	**1.16**	**1.05**
T-L-A-15	5/21/2001	44.71	556.69	1.25		
		38.57	566.66	1.47		
		31.86	386.02	1.21	**1.31**	**10.70**
T-L-A-16	5/21/2001	40.60	533.32	1.31		
		36.43	450.57	1.24		
		35.44	444.17	1.25	**1.27**	**3.19**
T-L-A-17	5/17/2001	34.28	403.45	1.18		
		44.16	543.58	1.23		
		54.10	669.83	1.24	**1.22**	**2.75**
T-L-A-18	5/21/2001	66.41	764.18	1.15		
		39.82	456.01	1.15		
		48.14	577.74	1.20	**1.17**	**2.60**
T-L-A-19	5/17/2001	57.88	534.60	0.92		
		54.33	423.39	0.78		
		79.71	651.37	0.82	**0.84**	**8.91**
T-L-A-20	5/17/2001	61.86	241.05	0.39		
		66.79	283.87	0.43		
		72.16	273.46	0.38	**0.40**	**6.06**

Project ID: G482801-UC13 **Analyst:** C. BURTON
Date: 5/29/2001

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-L-B-1	5/29/2001	24.97	740.36	2.96		
		37.94	1130.20	2.98		
		24.65	725.45	2.94	**2.96**	**0.61**
T-L-B-2	5/29/2001	28.87	866.52	3.00		
		32.50	974.83	3.00		
		34.96	1037.89	2.97	**2.99**	**0.61**
T-L-B-3	5/29/2001	32.31	940.22	2.91		
		49.66	1418.25	2.86		
		34.36	1006.66	2.93	**2.90**	**1.32**
T-L-B-4	5/29/2001	33.73	961.95	2.85		
		28.48	813.22	2.86		
		35.10	1028.11	2.93	**2.88**	**1.51**
T-L-B-5	5/29/2001	33.32	1043.71	3.13		
		25.55	791.49	3.10		
		33.94	1050.98	3.10	**3.11**	**0.65**
T-L-B-6	5/30/2001	36.57	1029.31	2.81		
		43.00	1186.50	2.76		
		33.14	910.56	2.75	**2.77**	**1.29**
T-L-B-7	5/30/2001	33.31	867.76	2.61		
		33.45	853.63	2.55		
		36.99	930.00	2.51	**2.56**	**1.79**
T-L-B-8	5/30/2001	37.67	1069.97	2.84		
		40.20	1098.10	2.73		
		50.92	1368.31	2.69	**2.75**	**2.86**
T-L-B-9	5/31/2001	32.71	1005.52	3.07		
		51.24	1551.53	3.03		
		35.42	1051.57	2.97	**3.02**	**1.74**
T-L-B-10	5/31/2001	50.15	1711.38	3.41		
		35.72	1203.57	3.37		
		33.17	1134.95	3.42	**3.40**	**0.82**
T-L-B-11	5/31/2001	40.85	1480.59	3.62		
		34.21	1215.85	3.55		
		27.38	957.09	3.50	**3.56**	**1.81**
T-L-B-12	5/31/2001	47.11	1413.64	3.00		
		24.44	737.93	3.02		
		40.97	1248.32	3.05	**3.02**	**0.77**

Project ID: G482801-UC13 **Analyst:** C. BURTON
Date:

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-L-B-13	5/31/2001					
		34.64	978.41	2.82		
		30.19	839.63	2.78	**2.80**	**1.09**
T-L-B-14	5/31/2001	32.40	806.72	2.49		
		35.20	877.93	2.49		
		35.26	878.58	2.49	**2.49**	**0.09**
T-L-B-15	5/31/2001	22.66	784.36	3.46		
		34.38	1199.84	3.49		
		34.62	1098.45	3.17	**3.37**	**5.20**
T-L-B-16	5/31/2001	43.83	1003.90	2.29		
		41.78	1006.69	2.41		
		45.67	1055.93	2.31	**2.34**	**2.71**
T-L-B-17	6/4/2001	36.51	690.20	1.89		
		45.86	636.26	1.39		
		37.45	523.97	1.40	**1.56**	**18.42**
T-L-B-18	6/4/2001	37.11	615.42	1.66		
		45.85	716.62	1.56		
		63.69	1038.57	1.63	**1.62**	**3.03**
T-L-B-19	6/4/2001	30.75	610.24	1.98		
		49.46	1021.95	2.07		
		30.46	751.01	2.47	**2.17**	**11.85**
T-L-B-20	6/4/2001	83.34	927.89	1.11		
		42.72	525.22	1.23		
		52.54	596.81	1.14	**1.16**	**5.31**

Project ID: G482801-UC13 **Analyst:** C. BURTON
Date: 6/4/2001

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-L-C-1	6/5/2001	36.89	1225.96	3.32		
		31.69	994.20	3.14		
		31.43	964.30	3.07	**3.18**	**4.16**
T-L-C-2	6/7/2001	30.89	937.90	3.04		
		34.25	964.15	2.82		
		33.16	978.72	2.95	**2.93**	**3.80**
T-L-C-3	6/6/2001	37.10	1089.78	2.94		
		33.82	1042.47	3.08		
		36.30	1028.76	2.83	**2.95**	**4.23**
T-L-C-4	6/6/2001	30.77	780.26	2.54		
		28.09	709.75	2.53		
		38.20	1019.66	2.67	**2.58**	**3.10**
T-L-C-5	6/4/2001	37.03	1102.44	2.98		
		32.19	976.91	3.03		
		34.19	1037.40	3.03	**3.02**	**1.10**
T-L-C-6	6/5/2001	47.57	1329.30	2.79		
		33.88	934.88	2.76		
		39.24	1163.24	2.96	**2.84**	**3.86**
T-L-C-7	6/6/2001	39.81	1702.19	4.28		
		44.95	1940.50	4.32		
		37.01	1448.75	3.91	**4.17**	**5.31**
T-L-C-8	6/11/2001	46.17	1904.64	4.13		
		44.47	1898.27	4.27		
		39.26	1664.59	4.24	**4.21**	**1.80**
T-L-C-9	6/5/2001	42.38	1061.31	2.50		
		36.48	909.84	2.49		
		42.06	1032.25	2.45	**2.48**	**1.06**
T-L-C-10	6/4/2001	44.05	1264.88	2.87		
		40.78	1184.82	2.91		
		28.81	817.97	2.84	**2.87**	**1.15**
T-L-C-11	6/5/2001	28.54	709.43	2.49		
		33.76	817.01	2.42		
		24.62	607.39	2.47	**2.46**	**1.38**
T-L-C-12	6/6/2001	35.58	829.79	2.33		
		30.96	724.40	2.34		
		37.13	888.65	2.39	**2.36**	**1.42**

Project ID: G482801-UC13 **Analyst:** C. BURTON

Date:

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-L-C-13	6/6/2001	43.76	1051.17	2.40		
		38.31	904.07	2.36		
		40.37	965.69	2.39	**2.38**	**0.93**
T-L-C-14	6/6/2001	41.01	960.97	2.34		
		31.95	749.55	2.35		
		33.16	774.53	2.34	**2.34**	**0.23**
T-L-C-15	6/7/2001	29.85	700.28	2.35		
		32.19	752.46	2.34		
		40.69	997.47	2.45	**2.38**	**2.67**
T-L-C-16	6/6/2001	50.87	1107.37	2.18		
		30.84	682.81	2.21		
		31.97	692.99	2.17	**2.19**	**1.12**
T-L-C-17	6/6/2001	65.46	829.76	1.27		
		45.47	552.50	1.22		
		55.26	698.24	1.26	**1.25**	**2.34**
T-L-C-18	6/7/2001	43.64	669.61	1.53		
		53.86	939.33	1.74		
		44.29			**1.64**	**9.04**
T-L-C-19	6/7/2001	45.42	1337.45	2.94		
		36.51	905.96	2.48		
		36.71	980.81	2.67	**2.70**	**8.63**
T-L-C-20	6/4/2001	35.23	681.48	1.93		
		38.84	645.40	1.66		
		38.58	691.92	1.79	**1.80**	**7.59**

Project ID: G482801-UC13 **Analyst:** C. BURTON
Date: 7/10/2001

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-I-A-1	7/10/2001	45.00	1195.07	2.66		
		44.28	1174.79	2.65		
		46.82	1240.97	2.65	**2.65**	**0.10**
T-I-A-2	7/10/2001	37.01	914.49	2.47		
		47.09	1156.77	2.46		
		48.14	1177.59	2.45	**2.46**	**0.51**
T-I-A-3	7/10/2001	48.53	1085.06	2.24		
		60.18	1296.77	2.15		
		41.77	1056.71	2.53	**2.31**	**8.55**
T-I-A-4	7/10/2001	51.15	1075.03	2.10		
		59.83	1306.83	2.18		
		50.64	1132.38	2.24	**2.17**	**3.12**
T-I-A-5	7/10/2001	75.92	1629.92	2.15		
		64.31	1109.28	1.72		
		69.40	1162.17	1.67	**1.85**	**14.03**
T-I-A-6	7/10/2001	57.02	1024.10	1.80		
		75.55	1458.93	1.93		
		65.65	1125.53	1.71	**1.81**	**6.03**
T-I-A-7	7/10/2001	74.61	1522.43	2.04		
		76.71	1561.75	2.04		
		60.70	1292.45	2.13	**2.07**	**2.54**
T-I-A-8	7/10/2001	58.88	1450.57	2.46		
		61.13	1425.31	2.33		
		55.42	1326.89	2.39	**2.40**	**2.76**
T-I-A-9	7/10/2001	53.12	1150.83	2.17		
		55.29	1171.43	2.12		
		67.75	1428.83	2.11	**2.13**	**1.44**
T-I-A-10	7/10/2001	72.03	1558.65	2.16		
		57.94	1145.92	1.98		
		64.25	1288.99	2.01	**2.05**	**4.89**
T-I-A-11	7/12/2001	50.13	945.96	1.89		
		72.96	1414.69	1.94		
		36.70	711.76	1.94	**1.92**	**1.57**
T-I-A-12	7/12/2001	58.62	1002.80	1.71		
		54.40	863.03	1.59		
		65.53	1107.56	1.69	**1.66**	**4.01**

Project ID: G482801-UC13 **Analyst:** C. BURTON
Date: 7/10/2001

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-I-A-13	7/12/2001	56.38	748.55	1.33		
		46.44	611.87	1.32		
		59.31	915.58	1.54	**1.40**	**9.15**
T-I-A-14	7/12/2001	56.50	921.77	1.63		
		58.05	902.62	1.55		
		56.59	894.46	1.58	**1.59**	**2.45**
T-I-A-15	7/12/2001	64.67	1006.88	1.56		
		63.16	1034.92	1.64		
		53.88	878.54	1.63	**1.61**	**2.80**
T-I-A-16	7/12/2001	79.10	1175.35	1.49		
		59.27	912.85	1.54		
		58.42	922.65	1.58	**1.54**	**3.06**
T-I-A-17	7/12/2001	52.46	829.63	1.58		
		48.91	759.67	1.55		
		60.97	931.11	1.53	**1.55**	**1.75**
T-I-A-18	7/12/2001	53.94	935.60	1.73		
		55.41	841.00	1.52		
		49.69	912.19	1.84	**1.70**	**9.58**
T-I-A-19	7/17/2001	62.45	878.13	1.41		
		66.90	945.60	1.41		
		68.14	968.73	1.42	**1.41**	**0.55**
T-I-A-20	7/17/2001	79.83	915.51	1.15		
		70.42	752.37	1.07		
		56.33	612.79	1.09	**1.10**	**3.71**

Project ID: G482801-UC13 **Analyst:** C. BURTON
Date: 7/17/2001

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-I-B-1	7/17/2001	47.90	1176.76	2.46		
		57.92	1523.70	2.63		
		43.22	1110.89	2.57	**2.55**	**3.46**
T-I-B-2	7/17/2001	38.14	866.71	2.27		
		40.60	927.80	2.29		
		48.90	1062.03	2.17	**2.24**	**2.77**
T-I-B-3	7/17/2001	46.78	976.24	2.09		
		38.71	835.20	2.16		
		46.47	990.52	2.13	**2.13**	**1.68**
T-I-B-4	7/17/2001	48.90	1007.07	2.06		
		44.10	898.56	2.04		
		46.34	982.01	2.12	**2.07**	**2.04**
T-I-B-5	7/18/2001	56.92	977.09	1.72		
		44.83	831.44	1.85		
		50.90	885.33	1.74	**1.77**	**4.18**
T-I-B-6	7/18/2001	45.51	1001.17	2.20		
		34.49	843.21	2.44		
		42.00	875.43	2.08	**2.24**	**8.21**
T-I-B-7	7/18/2001	49.81	1023.03	2.05		
		60.73	1171.02	1.93		
		54.84	1106.56	2.02	**2.00**	**3.23**
T-I-B-8	7/18/2001	42.55	348.17	0.82		
		56.63	506.09	0.89		
		42.55	363.11	0.85	**0.86**	**4.41**
T-I-B-9	7/18/2001	58.00	373.54	0.64		
		71.07	456.97	0.64		
		62.36	416.72	0.67	**0.65**	**2.19**
T-I-B-10	7/18/2001	47.42	324.39	0.68		
		53.54	368.23	0.69		
		68.47	482.31	0.70	**0.69**	**1.57**
T-I-B-11	7/18/2001	56.69	459.37	0.81		
		55.85	433.06	0.78		
		34.20	273.10	0.80	**0.79**	**2.24**
T-I-B-12	7/19/2001	53.16	634.13	1.19		
		44.43	454.89	1.02		
		44.19	478.72	1.08	**1.10**	**7.79**

Project ID: G482801-UC13 **Analyst:** C. BURTON
Date:

Sample ID	Date	Weight mg	ug of C	%C	Average	%RSD
T-I-B-13	7/19/2001	47.95	561.06	1.17		
		38.07	450.72	1.18		
		44.03	478.39	1.09	**1.15**	**4.60**
T-I-B-14	7/19/2001	40.86	550.52	1.35		
		38.73	516.38	1.33		
		37.80	504.26	1.33	**1.34**	**0.59**
T-I-B-15	7/19/2001	35.71	487.13	1.36		
		52.32	769.03	1.47		
		53.26	724.11	1.36	**1.40**	**4.46**
T-I-B-16	7/19/2001	35.98	531.03	1.48		
		44.48	747.74	1.68		
		43.46	653.98	1.50	**1.55**	**7.15**
T-I-B-17	7/20/2001	36.66	504.28	1.38		
		30.47	430.66	1.41		
		44.06	610.93	1.39	**1.39**	**1.40**
T-I-B-18	7/20/2001	42.07	582.87	1.39		
		23.74	330.51	1.39		
		46.11	591.84	1.28	**1.35**	**4.50**
T-I-B-19	7/20/2001	46.97	780.11	1.66		
		52.61	713.10	1.36		
		37.28	516.76	1.39	**1.47**	**11.46**
T-I-B-20	7/20/2001	44.37	606.63	1.37		
		47.94	699.58	1.46		
		43.22	575.34	1.33	**1.39**	**4.77**

APPENDIX C

PCB IUPAC IDENTIFICATION

Appendix C. IUPAC PCB Nomenclature and Numerical Identification

PCB Congener	Level of Chlorination	Compound name	PCB Congener	Level of Chlorination	Compound name
PCB1	1	2-chlorobiphenyl	PCB67	4	2,3',4,5-tetrachlorobiphenyl
PCB2	1	3-chlorobiphenyl	PCB68	4	2,3',4,5'-tetrachlorobiphenyl
PCB3	1	4-chlorobiphenyl	PCB69	4	2,3',4,6-tetrachlorobiphenyl
PCB4	2	2,2'-dichlorobiphenyl	PCB70	4	2,3',4',5-tetrachlorobiphenyl
PCB5	2	2,3-dichlorobiphenyl	PCB71	4	2,3',4',6-tetrachlorobiphenyl
PCB6	2	2,3'-dichlorobiphenyl	PCB72	4	2,3',5,5'-tetrachlorobiphenyl
PCB7	2	2,4-dichlorobiphenyl	PCB73	4	2,3',5',6-tetrachlorobiphenyl
PCB8	2	2,4'-dichlorobiphenyl	PCB74	4	2,4,4',5-tetrachlorobiphenyl
PCB9	2	2,5-dichlorobiphenyl	PCB75	4	2,4,4',6-tetrachlorobiphenyl
PCB10	2	2,6-dichlorobiphenyl	PCB76	4	2',3,4,5-tetrachlorobiphenyl
PCB11	2	3,3'-dichlorobiphenyl	PCB77	4	3,3',4,4'-tetrachlorobiphenyl
PCB12	2	3,4-dichlorobiphenyl	PCB78	4	3,3',4,5-tetrachlorobiphenyl
PCB13	2	3,4'-dichlorobiphenyl	PCB79	4	3,3',4,5'-tetrachlorobiphenyl
PCB14	2	3,5-dichlorobiphenyl	PCB80	4	3,3',5,5'-tetrachlorobiphenyl
PCB15	2	4,4'-dichlorobiphenyl	PCB81	4	3,4,4',5-tetrachlorobiphenyl
PCB16	3	2,2',3-trichlorobiphenyl	PCB82	5	2,2',3,3',4-pentachlorobiphenyl
PCB17	3	2,2',4-trichlorobiphenyl	PCB83	5	2,2',3,3',5-pentachlorobiphenyl
PCB18	3	2,2',5-trichlorobiphenyl	PCB84	5	2,2',3,3',6-pentachlorobiphenyl
PCB19	3	2,2',6-trichlorobiphenyl	PCB85	5	2,2',3,4,4'-pentachlorobiphenyl
PCB20	3	2,3,3'-trichlorobiphenyl	PCB86	5	2,2',3,4,5-pentachlorobiphenyl
PCB21	3	2,3,4-trichlorobiphenyl	PCB87	5	2,2',3,4,5'-pentachlorobiphenyl
PCB22	3	2,3,4'-trichlorobiphenyl	PCB88	5	2,2',3,4,6-pentachlorobiphenyl
PCB23	3	2,3,5-trichlorobiphenyl	PCB89	5	2,2',3,4,6'-pentachlorobiphenyl
PCB24	3	2,3,6-trichlorobiphenyl	PCB90	5	2,2',3,4',5-pentachlorobiphenyl
PCB25	3	2,3',4-trichlorobiphenyl	PCB91	5	2,2',3,4',6-pentachlorobiphenyl
PCB26	3	2,3',5-trichlorobiphenyl	PCB92	5	2,2',3,5,5'-pentachlorobiphenyl
PCB27	3	2,3',6-trichlorobiphenyl	PCB93	5	2,2',3,5,6-pentachlorobiphenyl
PCB28	3	2,4,4'-trichlorobiphenyl	PCB94	5	2,2',3,5,6'-pentachlorobiphenyl
PCB29	3	2,4,5-trichlorobiphenyl	PCB95	5	2,2',3,5',6-pentachlorobiphenyl
PCB30	3	2,4,6-trichlorobiphenyl	PCB96	5	2,2',3,6,6'-pentachlorobiphenyl
PCB31	3	2,4',5-trichlorobiphenyl	PCB97	5	2,2',3',4,5-pentachlorobiphenyl
PCB32	3	2,4',6-trichlorobiphenyl	PCB98	5	2,2',3',4,6-pentachlorobiphenyl
PCB33	3	2',3,4-trichlorobiphenyl	PCB99	5	2,2',4,4',5-pentachlorobiphenyl
PCB34	3	2',3,5-trichlorobiphenyl	PCB100	5	2,2',4,4',6-pentachlorobiphenyl
PCB35	3	3,3',4-trichlorobiphenyl	PCB101	5	2,2',4,5,5'-pentachlorobiphenyl
PCB36	3	3,3',5-trichlorobiphenyl	PCB102	5	2,2',4,5,6'-pentachlorobiphenyl
PCB37	3	3,4,4'-trichlorobiphenyl	PCB103	5	2,2',4,5',6-pentachlorobiphenyl
PCB38	3	3,4,5-trichlorobiphenyl	PCB104	5	2,2',4,6,6'-pentachlorobiphenyl
PCB39	3	3,4',5-trichlorobiphenyl	PCB105	5	2,3,3',4,4'-pentachlorobiphenyl
PCB40	4	2,2',3,3'-tetrachlorobiphenyl	PCB106	5	2,3,3',4,5-pentachlorobiphenyl
PCB41	4	2,2',3,4-tetrachlorobiphenyl	PCB107	5	2,3,3',4,5'-pentachlorobiphenyl
PCB42	4	2,2',3,4'-tetrachlorobiphenyl	PCB108	5	2,3,3',4,6-pentachlorobiphenyl
PCB43	4	2,2',3,5-tetrachlorobiphenyl	PCB109	5	2,3,3',4',5-pentachlorobiphenyl
PCB44	4	2,2',3,5'-tetrachlorobiphenyl	PCB110	5	2,3,3',4',6-pentachlorobiphenyl
PCB45	4	2,2',3,6-tetrachlorobiphenyl	PCB111	5	2,3,3',5,5'-pentachlorobiphenyl
PCB46	4	2,2',3,6'-tetrachlorobiphenyl	PCB112	5	2,3,3',5,6-pentachlorobiphenyl
PCB47	4	2,2',4,4'-tetrachlorobiphenyl	PCB113	5	2,3,3',5',6-pentachlorobiphenyl
PCB48	4	2,2',4,5-tetrachlorobiphenyl	PCB114	5	2,3,4,4',5-pentachlorobiphenyl
PCB49	4	2,2',4,5'-tetrachlorobiphenyl	PCB115	5	2,3,4,4',6-pentachlorobiphenyl
PCB50	4	2,2',4,6-tetrachlorobiphenyl	PCB116	5	2,3,4,5,6-pentachlorobiphenyl
PCB51	4	2,2',4,6'-tetrachlorobiphenyl	PCB117	5	2,3,4',5,6-pentachlorobiphenyl
PCB52	4	2,2',5,5'-tetrachlorobiphenyl	PCB118	5	2,3',4,4',5-pentachlorobiphenyl
PCB53	4	2,2',5,6'-tetrachlorobiphenyl	PCB119	5	2,3',4,4',6-pentachlorobiphenyl
PCB54	4	2,2',6,6'-tetrachlorobiphenyl	PCB120	5	2,3',4,5,5'-pentachlorobiphenyl
PCB55	4	2,3,3',4-tetrachlorobiphenyl	PCB121	5	2,3',4,5',6-pentachlorobiphenyl
PCB56	4	2,3,3',4'-tetrachlorobiphenyl	PCB122	5	2',3,3',4,5-pentachlorobiphenyl
PCB57	4	2,3,3',5-tetrachlorobiphenyl	PCB123	5	2',3,4,4',5-pentachlorobiphenyl
PCB58	4	2,3,3',5'-tetrachlorobiphenyl	PCB124	5	2',3,4,5,5'-pentachlorobiphenyl
PCB59	4	2,3,3',6-tetrachlorobiphenyl	PCB125	5	2',3,4,5,6'-pentachlorobiphenyl
PCB60	4	2,3,4,4'-tetrachlorobiphenyl	PCB126	5	3,3',4,4',5-pentachlorobiphenyl
PCB61	4	2,3,4,5-tetrachlorobiphenyl	PCB127	5	3,3',4,5,5'-pentachlorobiphenyl
PCB62	4	2,3,4,6-tetrachlorobiphenyl	PCB128	6	2,2',3,3',4,4'-hexachlorobiphenyl
PCB63	4	2,3,4',5-tetrachlorobiphenyl	PCB129	6	2,2',3,3',4,5-hexachlorobiphenyl
PCB64	4	2,3,4',6-tetrachlorobiphenyl	PCB130	6	2,2',3,3',4,5'-hexachlorobiphenyl
PCB65	4	2,3,5,6-tetrachlorobiphenyl	PCB131	6	2,2',3,3',4,6-hexachlorobiphenyl
PCB66	4	2,3',4,4'-tetrachlorobiphenyl	PCB132	6	2,2',3,3',4,6'-hexachlorobiphenyl

Appendix C. IUPAC PCB Nomenclature and Numerical Identification

PCB Congener	Level of Chlorination	Compound name	PCB Congener	Level of Chlorination	Compound name
PCB133	6	2,2',3,3',5,5'-hexachlorobiphenyl	PCB172	7	2,2',3,3',4,5,5'-heptachlorobiphenyl
PCB134	6	2,2',3,3',5,6-hexachlorobiphenyl	PCB173	7	2,2',3,3',4,5,6-heptachlorobiphenyl
PCB135	6	2,2',3,3',5,6'-hexachlorobiphenyl	PCB174	7	2,2',3,3',4,5,6'-heptachlorobiphenyl
PCB136	6	2,2',3,3',6,6'-hexachlorobiphenyl	PCB175	7	2,2',3,3',4,5',6-heptachlorobiphenyl
PCB137	6	2,2',3,4,4',5-hexachlorobiphenyl	PCB176	7	2,2',3,3',4,6,6'-heptachlorobiphenyl
PCB138	6	2,2',3,4,4',5'-hexachlorobiphenyl	PCB177	7	2,2',3,3',4',5,6-heptachlorobiphenyl
PCB139	6	2,2',3,4,4',6-hexachlorobiphenyl	PCB178	7	2,2',3,3',5,5',6-heptachlorobiphenyl
PCB140	6	2,2',3,4,4',6'-hexachlorobiphenyl	PCB179	7	2,2',3,3',5,6,6'-heptachlorobiphenyl
PCB141	6	2,2',3,4,5,5'-hexachlorobiphenyl	PCB180	7	2,2',3,4,4',5,5'-heptachlorobiphenyl
PCB142	6	2,2',3,4,5,6-hexachlorobiphenyl	PCB181	7	2,2',3,4,4',5,6-heptachlorobiphenyl
PCB143	6	2,2',3,4,5,6'-hexachlorobiphenyl	PCB182	7	2,2',3,4,4',5,6'-heptachlorobiphenyl
PCB144	6	2,2',3,4,5',6-hexachlorobiphenyl	PCB183	7	2,2',3,4,4',5',6-heptachlorobiphenyl
PCB145	6	2,2',3,4,6,6'-hexachlorobiphenyl	PCB184	7	2,2',3,4,4',6,6'-heptachlorobiphenyl
PCB146	6	2,2',3,4',5,5'-hexachlorobiphenyl	PCB185	7	2,2',3,4,5,5',6-heptachlorobiphenyl
PCB147	6	2,2',3,4',5,6-hexachlorobiphenyl	PCB186	7	2,2',3,4,5,6,6'-heptachlorobiphenyl
PCB148	6	2,2',3,4',5,6'-hexachlorobiphenyl	PCB187	7	2,2',3,4',5,5',6-heptachlorobiphenyl
PCB149	6	2,2',3,4',5',6-hexachlorobiphenyl	PCB188	7	2,2',3,4',5,6,6'-heptachlorobiphenyl
PCB150	6	2,2',3,4',6,6'-hexachlorobiphenyl	PCB189	7	2,3,3',4,4',5,5'-heptachlorobiphenyl
PCB151	6	2,2',3,5,5',6-hexachlorobiphenyl	PCB190	7	2,3,3',4,4',5,6-heptachlorobiphenyl
PCB152	6	2,2',3,5,6,6'-hexachlorobiphenyl	PCB191	7	2,3,3',4,4',5',6-heptachlorobiphenyl
PCB153	6	2,2',4,4',5,5'-hexachlorobiphenyl	PCB192	7	2,3,3',4,5,5',6-heptachlorobiphenyl
PCB154	6	2,2',4,4',5,6'-hexachlorobiphenyl	PCB193	7	2,3,3',4',5,5',6-heptachlorobiphenyl
PCB155	6	2,2',4,4',6,6'-hexachlorobiphenyl	PCB194	8	2,2',3,3',4,4',5,5'-octachlorobiphenyl
PCB156	6	2,3,3',4,4',5-hexachlorobiphenyl	PCB195	8	2,2',3,3',4,4',5,6-octachlorobiphenyl
PCB157	6	2,3,3',4,4',5'-hexachlorobiphenyl	PCB196	8	2,2',3,3',4,4',5,6'-octachlorobiphenyl
PCB158	6	2,3,3',4,4',6-hexachlorobiphenyl	PCB197	8	2,2',3,3',4,4',6,6'-octachlorobiphenyl
PCB159	6	2,3,3',4,5,5'-hexachlorobiphenyl	PCB198	8	2,2',3,3',4,5,5',6-octachlorobiphenyl
PCB160	6	2,3,3',4,5,6-hexachlorobiphenyl	PCB199	8	2,2',3,3',4,5,5',6'-octachlorobiphenyl
PCB161	6	2,3,3',4,5',6-hexachlorobiphenyl	PCB200	8	2,2',3,3',4,5,6,6'-octachlorobiphenyl
PCB162	6	2,3,3',4',5,5'-hexachlorobiphenyl	PCB201	8	2,2',3,3',4,5',6,6'-octachlorobiphenyl
PCB163	6	2,3,3',4',5,6-hexachlorobiphenyl	PCB202	8	2,2',3,3',5,5',6,6'-octachlorobiphenyl
PCB164	6	2,3,3',4',5',6-hexachlorobiphenyl	PCB203	8	2,2',3,4,4',5,5',6-octachlorobiphenyl
PCB165	6	2,3,3',5,5',6-hexachlorobiphenyl	PCB204	8	2,2',3,4,4',5,6,6'-octachlorobiphenyl
PCB166	6	2,3,4,4',5,6-hexachlorobiphenyl	PCB205	8	2,3,3',4,4',5,5',6-octachlorobiphenyl
PCB167	6	2,3',4,4',5,5'-hexachlorobiphenyl	PCB206	9	2,2',3,3',4,4',5,5',6-nonachlorobiphenyl
PCB168	6	2,3',4,4',5',6-hexachlorobiphenyl	PCB207	9	2,2',3,3',4,4',5,6,6'-nonachlorobiphenyl
PCB169	6	3,3',4,4',5,5'-hexachlorobiphenyl	PCB208	9	2,2',3,3',4,5,5',6,6'-nonachlorobiphenyl
PCB170	7	2,2',3,3',4,4',5-heptachlorobiphenyl	PCB209	10	decachlorobiphenyl
PCB171	7	2,2',3,3',4,4',6-heptachlorobiphenyl			

APPENDIX D

METHOD DETECTION LIMITS AND QA/QC DATA SUMMARY

Battelle
. . . Putting Technology To Work

Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, WA 98382
Telephone 360-681-3627
Fax: 360-681-3699

December 3, 2001

Dr. Victor Magar
Battelle Memorial Institute
Columbus, OH

Subject: Delivery of Electronic Pb-210 Data from the Lake Hartwell Site

Dear Victor:

This letter provides a summary of the data quality for analyses Battelle's Sequim has performed in order to determine the concentrations of Pb-210 in sediment samples from the Lake Hartwell investigative site.

Samples were received in good condition at our laboratory on May 11, 2001 (see attached chain of custody forms), with shipping temperatures within acceptable limits. A total of 156 sediment samples, along with the appropriate quality control (QC) samples, were processed and analyzed in six analytical batches.

The enclosed data summary table contains the tabulated Pb-210 results and sedimentation rates for cores that were calculable and associated quality control (QC) sample analyses. Electronic copies of these data have been forwarded to Eric Foote. The final field sample data are contained in a single worksheet while the QC sample data are found on separate worksheets. All of these data will be thoroughly reviewed and validated by MSL's independent Quality Assurance Unit, as well as by staff of the chemistry department, as per the Project QAPP.

Specific Quality Control Sample Information

The quality control (QC) sample data quality objectives (DQOs) were consistently met for this project, thereby supporting the overall reliability and quality of the reported data. Below is a listing and discussion of the QC for the data set.

- *Sample Holding Times.* Sample holding times are not applicable to this analyte.

- *Procedural (Method) Blank*. A method or procedural blank (PB) was processed and analyzed with each analytical batch of samples. The data quality objectives (DQOs) for the procedural blank were consistently met as defined in the QAPP for Pb-210 analysis.

- *Laboratory Control Sample Recovery*. A laboratory control sample (LCS) was processed and analyzed with each analytical batch of samples. LCS results verified Po-208 was added precisely, although results are not calculable with the formulas used for this analyte.

- *Matrix Spike Recovery and Precision*. Not applicable to this analyte.

- *Sample Duplicate.* One sample duplicate set was processed with the field samples in the analytical batch of samples. The duplicate data quality objectives (DQOs) for precision were generally met as defined in the Project QAPP for 8270M analysis, with only three results falling outside of the desired criteria of ±25%. Due to other criteria, these results were not used in the calculations for sedimentation rates, therefore the criteria exceedance do not impact the usable data

- *Check Standard Recoveries*. Check standards were analyzed with each batch of samples to monitor accuracy. All recoveries were within the method criteria of ±25%.

Please do not hesitate to give me a call if you would like to discuss these data or if I can provide any further assistance.

Sincerely,

Linda S. Bingler
Research Scientist

APPENDIX E

LABORATORY-REPORTED SAMPLE DATA BY CORE WITH QC DATA QUALIFIERS

Battelle
. . . *Putting Technology To Work*

Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Core/Site: TIA

Client Reporting Sample ID:	T-I-A-1	T-I-A-2	T-I-A-3	T-I-A-4
Battelle Sample ID:	W2777	W2778	W2779	W2780
Extraction Batch ID:	01-222	01-222	01-222	01-222
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	72.69	68.75	67.25	59.20
Sample Dry Weight (g):	3.65	5.10	5.24	6.70
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	1.52 J	0.65 J	2.84 J	7.56
PCB1	46.48	337.50	832.76 Y	1978.57 D
PCB3	5.33	65.42	182.65	241.41
PCB4/10	99.11	1051.51 Y	3185.31 D	7090.25 D
PCB6	3.11	27.81	78.92	116.84
PCB7/9	1.52 J	6.96	14.29	19.41
PCB8/5	22.28	224.03	718.38	849.02 Y
PCB12/13	0.64 J	1.14 J	2.85	6.97
PCB16/32	41.93	341.39	697.97	386.75
PCB17	23.87	184.98	411.67	255.08
PCB18	9.45	64.55	170.45	186.41
PCB19	35.04	280.87	913.32 Y	2114.28 D
PCB21	ND U	ND U	ND U	ND U
PCB22	2.60	5.99	4.14	0.98 J
PCB24/27	17.64	113.62	268.36	568.67 Y
PCB25	2.79	20.05	50.48	13.04
PCB26	6.45	34.46	107.07	98.60
PCB28	19.88	56.52	22.58	17.24
PCB29	ND U	0.80 J	1.81	3.25
PCB31	11.54	50.11	111.20	115.95
PCB33/20	6.40	16.20	6.37	4.68
PCB40	6.96	20.23	52.95	63.34
PCB41/64/71	27.14	84.48	193.35	108.27
PCB42	11.55	30.55	25.23	7.61
PCB43	ND U	ND U	ND U	ND U
PCB44	20.67	48.79	25.11	11.38
PCB45	4.54	14.68	19.94	38.87
PCB46	1.73 J	3.98	6.10	6.12
PCB47/75	43.81	229.93	540.11	356.71
PCB48	ND U	ND U	ND U	ND U
PCB49	48.92	235.65	502.63	282.74
PCB51	20.81	122.74	370.52	434.69
PCB52	48.09	215.62	520.22	448.19
PCB53	29.43	190.55	624.86	991.09 Y
PCB56/60	12.96	18.26	6.14	2.93
PCB59	3.05	7.31	9.58	24.23
PCB63	2.06 J	5.53	1.84	0.24 J
PCB66	36.52	78.21	29.11	13.76
PCB70/76	21.37	42.06	19.84	16.16
PCB74	20.50	51.48	28.39	8.92
PCB82	3.25	2.73	0.46 J	0.84 J
PCB83	2.83	4.57	3.73	2.47
PCB84	10.96	32.16	57.81	47.32
PCB85	5.49	9.36	3.64	2.01
PCB87/115	7.06	5.49	1.64 J	2.07
PCB89	ND U	ND U	ND U	ND U
PCB91	17.35	83.53	195.94	225.05
PCB92	9.89	28.90	16.81	14.69
PCB95	40.76	152.13	387.47	445.91
PCB97	10.37	18.94	9.37	3.32
PCB99	30.62	104.30	55.71	30.08
PCB100	3.11	15.21	47.48	64.34
PCB101/90	40.90	111.92	79.57	55.76
PCB105	5.93	5.60	2.74	1.84
PCB107	3.15	8.31	4.64	5.02
PCB110	70.97	237.95	294.71	449.02
PCB114	ND U	ND U	ND U	ND U
PCB118	33.81	82.05	51.66	36.14
PCB119	3.91	18.76	20.75	19.91
PCB124	0.58 J	0.43 J	0.36 J	0.19 J
PCB128	6.46	12.35	7.01	7.20
PCB129	0.94 J	0.79 J	ND U	0.64 J
PCB130	2.63	6.85	3.55	5.77
PCB131	0.34 J	ND U	ND U	ND U
PCB132	10.44	26.14	13.18	21.25

Client Reporting Sample ID:	T-I-A-1	T-I-A-2	T-I-A-3	T-I-A-4
PCB134	2.32 J	5.56	1.94	9.14
PCB135/144	8.44	31.47	31.50	46.44
PCB136	6.38	24.29	55.17	78.83
PCB137	1.25 J	2.04	1.36 J	1.05 J
PCB138/160/163	35.15	91.70	92.64	125.07
PCB141	2.39 J	2.37	1.51 J	1.69
PCB146	8.04	30.53	27.99	34.62
PCB149	36.86	148.49	176.47	280.65
PCB151	9.50	30.29	21.89	37.29
PCB153	34.04	134.96	106.31	87.71
PCB156	1.96 J	3.56	2.51	2.66
PCB158	2.03 J	2.94	1.77 J	2.04
PCB167	1.26 J	2.35	1.52 J	1.09 J
PCB169	ND U	ND U	ND U	ND U
PCB170/190	5.19	12.68	9.92	14.36
PCB171	1.92 J	5.01	4.30	5.98
PCB172	0.36 J	0.69 J	0.77 J	1.11 J
PCB173	ND U	0.35 J	ND U	0.23 J
PCB174	3.68	10.61	7.22	9.02
PCB175	ND U	0.61 J	0.52 J	0.75 J
PCB176	0.94 J	2.65	2.53	3.89
PCB177	4.74	15.74	16.02	30.81
PCB178	1.57 J	7.19	12.80	19.33
PCB180	6.17	17.33	12.80	16.88
PCB183	2.22 J	5.85	5.10	5.29
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U
PCB187/182	7.72	32.53	45.01	73.37
PCB189	0.34 J	0.64 J	0.54 J	0.70 J
PCB191	0.42 J	0.40 J	0.40 J	0.47 J
PCB193	0.64 J	2.08	2.28	4.50
PCB194	1.20 J	3.95	4.80	7.50
PCB195	0.43 J	1.34 J	2.52	3.30
PCB197	ND U	0.53 J	0.52 J	0.74 J
PCB198	0.94 J	0.64 J	0.53 J	1.21 J
PCB199	2.00 J	7.16	9.32	14.56
PCB200	ND U	0.82 J	1.11 J	1.54
PCB201	0.57 J	1.14 J	2.04	2.90
PCB203/196	1.71 J	5.31	5.60	8.39
PCB205	ND U	ND U	0.34 J	0.54 J
PCB206	1.10 J	3.12	4.64	10.06
PCB207	0.23 J	0.60 J	0.71 J	1.61
PCB209	0.52 J	1.04 J	1.47	3.47

Surrogate Recovery (%)				
PCB104	75	80	76	84
PCB14	58	55	55	59
PCB34	58	68	71	95
PCB112	73	88	79	85

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-I-A-1	T-I-A-2	T-I-A-3	T-I-A-4
Cl 1	51.80	402.92	1015.40	2219.98
Cl 2	126.66	1311.44	3999.75	8082.49
Cl 3	177.60	1169.54	2765.41	3764.93
Cl 4	360.12	1400.03	2975.92	2815.24
Cl 5	300.95	922.32	1234.48	1405.98
Cl 6	170.44	556.68	546.32	743.16
Cl 7	35.92	114.36	120.21	186.69
Cl 8	6.86	20.90	26.78	40.67
Cl 9	1.33	3.72	5.35	11.68
Cl 10	0.52	1.04	1.47	3.47
SUM PCB	1233.70	5903.59	12693.92	19281.85

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Core/Site: TIA

Client Reporting Sample ID:	T-I-A-5	T-I-A-6	T-I-A-7	T-I-A-8
Battelle Sample ID:	W2781	W2782	W2783	W2784
Extraction Batch ID:	01-222	01-222	01-222	01-222
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	43.30	37.88	37.88	41.60
Sample Dry Weight (g):	8.84	9.70	10.15	8.46
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	3.88	1.08 J	0.61 J	0.47 J
PCB1	816.10 Y	112.80	14.14	2.75
PCB3	87.23	3.15	1.35	0.30 J
PCB4/10	3061.13 D	333.94	55.08	9.64
PCB6	80.15	14.45	7.87	1.05 J
PCB7/9	19.70	2.31	1.42	0.59 J
PCB8/5	368.95	42.31	24.67	5.08
PCB12/13	6.21	0.92 J	0.66 J	ND U
PCB16/32	193.67	28.07	27.88	4.69
PCB17	116.11	36.50	30.74	4.35
PCB18	134.96	90.91	87.07	16.66
PCB19	554.86 Y	25.72	12.08	2.25
PCB21	ND U	ND U	ND U	ND U
PCB22	5.30	19.18	20.69	5.67
PCB24/27	197.49	7.07	5.23	1.24
PCB25	13.91	14.72	10.96	1.60
PCB26	54.33	22.83	16.05	3.08
PCB28	21.24	91.48	114.65	23.98
PCB29	0.59 J	0.15 J	0.20 J	ND U
PCB31	73.71	62.65	57.08	13.22
PCB33/20	3.27	15.12	18.48	4.37
PCB40	11.22	2.01	1.55	1.92
PCB41/64/71	42.36	61.29	63.46	15.07
PCB42	10.73	24.41	23.67	3.94
PCB43	ND U	ND U	ND U	ND U
PCB44	17.11	58.23	64.80	13.38
PCB45	15.11	9.58	10.67	2.31
PCB46	2.92	2.92	3.53	0.51 J
PCB47/75	92.90	22.37	19.01	3.43
PCB48	ND U	13.41	18.63	3.97
PCB49	100.56	75.89	71.00	14.43
PCB51	86.22	4.18	4.12	0.85 J
PCB52	161.33	94.41	90.01	19.45
PCB53	235.70	15.31	14.38	3.22
PCB56/60	7.85	48.32	51.63	12.86
PCB59	9.05	4.88	5.67	1.30
PCB63	0.92 J	2.16	1.35	0.76 J
PCB66	17.24	68.78	70.36	16.03
PCB70/76	16.28	61.97	62.56	14.64
PCB74	12.50	41.38	39.37	8.61
PCB82	1.25	4.60	4.42	1.00 J
PCB83	1.80	1.89	1.99	0.45 J
PCB84	18.57	10.04	9.01	2.06
PCB85	1.50	6.47	5.48	1.45
PCB87/115	3.50	13.52	12.44	2.97
PCB89	ND U	ND U	ND U	ND U
PCB91	52.79	6.34	5.07	1.16
PCB92	6.61	5.44	5.07	1.43
PCB95	100.52	31.85	28.90	6.10
PCB97	3.67	10.51	9.49	2.08
PCB99	20.83	16.15	13.39	2.87
PCB100	9.63	0.34 J	0.32 J	ND U
PCB101/90	24.87	34.18	30.24	6.51
PCB105	2.80	10.34	8.28	1.78
PCB107	2.16	1.76	1.48	0.38 J
PCB110	143.34	44.58	36.60	7.04
PCB114	ND U	0.35 J	0.57 J	ND U
PCB118	21.72	26.00	21.20	4.52
PCB119	5.34	0.89 J	0.68 J	0.22 J
PCB124	0.24 J	0.67 J	0.53 J	0.16 J
PCB128	6.12	4.36	3.85	1.13 J
PCB129	0.31 J	0.99	0.76 J	0.25 J
PCB130	3.90	1.18	0.89	ND U
PCB131	ND U	0.34 J	0.36 J	ND U
PCB132	16.22	7.64	6.48	1.29

Client Reporting Sample ID:	T-I-A-5	T-I-A-6	T-I-A-7	T-I-A-8
PCB134	3.92	1.39	1.11	0.29 J
PCB135/144	14.71	3.13	2.42	0.64 J
PCB136	20.14	3.19	2.59	0.62 J
PCB137	1.20	1.15	1.13	ND U
PCB138/160/163	49.62	24.82	18.82	4.15
PCB141	1.71	3.07	2.62	0.67 J
PCB146	9.04	2.50	1.91	0.63 J
PCB149	100.27	17.38	13.09	3.13
PCB151	15.70	3.80	3.11	1.00 J
PCB153	35.28	16.00	11.81	2.98
PCB156	2.92	1.63	1.39	0.30 J
PCB158	2.02	2.03	1.54	0.38 J
PCB167	1.07 J	0.73 J	0.65 J	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	11.35	3.87	2.03	0.74 J
PCB171	3.82	1.02	0.73 J	0.20 J
PCB172	0.68 J	0.24 J	0.21 J	ND U
PCB173	0.20 J	0.13 J	ND U	ND U
PCB174	6.02	3.44	2.56	0.90 J
PCB175	0.73 J	ND U	ND U	ND U
PCB176	1.73	0.38 J	0.43 J	ND U
PCB177	10.49	2.10	1.63	0.40 J
PCB178	4.52	0.68 J	0.38 J	ND U
PCB180	14.45	5.91	3.79	1.16 J
PCB183	5.05	1.43	1.08	0.41 J
PCB184	ND U	ND U	ND U	ND U
PCB185	0.50 J	0.33 J	0.35 J	ND U
PCB187/182	19.71	3.53	2.33	0.68 J
PCB189	0.40 J	0.11 J	ND U	ND U
PCB191	0.29 J	0.11 J	ND U	ND U
PCB193	1.40	0.29 J	ND U	ND U
PCB194	3.21	1.47	0.96 J	ND U
PCB195	1.68	0.76 J	0.52 J	ND U
PCB197	0.22 J	ND U	ND U	ND U
PCB198	0.34 J	ND U	0.40 J	0.21 J
PCB199	5.64	1.61	1.16	0.36 J
PCB200	0.76 J	0.23 J	ND U	ND U
PCB201	1.14	0.14 J	0.14 J	ND U
PCB203/196	4.85	1.38	1.04	0.49 J
PCB205	0.38 J	ND U	ND U	ND U
PCB206	4.74	0.79	0.50 J	0.25 J
PCB207	0.72 J	0.10 J	0.09 J	ND U
PCB209	1.64	0.24 J	0.24 J	0.24 J

Surrogate Recovery (%)				
PCB104	58	62	70	78
PCB14	44	51	57	64
PCB34	54	50	57	62
PCB112	60	61	67	73

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-I-A-5	T-I-A-6	T-I-A-7	T-I-A-8
Cl 1	903.33	115.95	15.49	3.04
Cl 2	3536.14	393.94	89.70	16.37
Cl 3	1369.43	414.40	401.12	81.08
Cl 4	839.98	611.51	615.78	136.68
Cl 5	421.11	225.93	195.14	42.18
Cl 6	284.15	95.35	74.54	17.45
Cl 7	81.34	23.59	15.51	4.49
Cl 8	18.23	5.59	4.23	1.06
Cl 9	5.47	0.89	0.58	0.25
Cl 10	1.64	0.24	0.24	0.24
SUM PCB	7464.70	1888.47	1412.95	303.31

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Core/Site: TIA

Client Reporting Sample ID:	T-I-A-9	T-I-A-10	T-I-A-11	T-I-A-12
Battelle Sample ID:	W2785	W2786	W2787	W2788
Extraction Batch ID:	01-222	01-222	01-222	01-222
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	37.18	38.48	35.20	33.87
Sample Dry Weight (g):	9.69	8.83	10.06	9.86
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.43 J	0.30 J	0.26 J	0.54 J
PCB1	1.88	6.29	1.07	2.49
PCB3	0.26 J	0.58 J	0.11 J	0.11 J
PCB4/10	6.58	20.84	3.49	7.50
PCB6	0.30 J	0.68 J	0.16 J	0.42 J
PCB7/9	0.23 J	0.41 J	0.21 J	0.22 J
PCB8/5	1.47	2.66	0.58 J	1.01 J
PCB12/13	ND U	ND U	ND U	ND U
PCB16/32	1.15	1.67	0.49 J	0.76 J
PCB17	1.15	1.17	0.44 J	1.14
PCB18	2.26	1.63	0.74 J	1.88
PCB19	1.68	4.47	0.84 J	1.11
PCB21	ND U	ND U	ND U	ND U
PCB22	0.85 J	0.31 J	0.17 J	0.38 J
PCB24/27	0.53 J	1.41	0.25 J	0.42 J
PCB25	0.34 J	ND U	ND U	0.41 J
PCB26	0.65 J	0.63 J	ND U	0.52 J
PCB28	3.17	0.86 J	0.78 J	1.83
PCB29	ND U	ND U	ND U	ND U
PCB31	2.63	1.22	0.60 J	1.48
PCB33/20	0.54 J	ND U	ND U	0.40 J
PCB40	1.33	1.15	1.04	1.13
PCB41/64/71	3.32	1.10 J	0.90 J	1.51
PCB42	0.99 J	0.35 J	0.41 J	0.62 J
PCB43	ND U	ND U	ND U	ND U
PCB44	2.54	0.72 J	0.57 J	1.27
PCB45	0.54 J	ND U	ND U	0.27 J
PCB46	ND U	ND U	ND U	ND U
PCB47/75	0.97	0.70 J	0.30 J	0.59 J
PCB48	0.72 J	0.31 J	ND U	0.61 J
PCB49	3.20	1.56	0.62 J	1.61
PCB51	0.65 J	0.82 J	0.24 J	0.39 J
PCB52	4.19	2.28	1.07	2.11
PCB53	1.29	1.85	0.41 J	0.58 J
PCB56/60	2.89	0.77 J	0.53 J	1.17
PCB59	0.28 J	0.20 J	0.09 J	0.19 J
PCB63	0.18 J	ND U	ND U	ND U
PCB66	3.57	0.98 J	0.67 J	1.43
PCB70/76	3.37	1.00 J	0.77 J	1.19
PCB74	2.11	0.58 J	0.48 J	1.10
PCB82	0.43 J	ND U	ND U	ND U
PCB83	ND U	ND U	ND U	ND U
PCB84	0.67 J	0.32 J	ND U	0.30 J
PCB85	0.46 J	ND U	ND U	ND U
PCB87/115	0.79 J	ND U	ND U	ND U
PCB89	ND U	ND U	ND U	ND U
PCB91	0.62 J	0.63 J	0.18 J	0.26 J
PCB92	0.42 J	ND U	ND U	ND U
PCB95	1.80	1.15	0.39 J	0.86 J
PCB97	0.63 J	ND U	ND U	ND U
PCB99	1.03	0.38 J	ND U	0.40 J
PCB100	ND U	ND U	ND U	ND U
PCB101/90	1.83	0.77 J	0.41 J	0.83 J
PCB105	0.59 J	ND U	ND U	0.29 J
PCB107	ND U	ND U	ND U	ND U
PCB110	2.55	1.58	0.58 J	1.17
PCB114	ND U	ND U	ND U	ND U
PCB118	1.41	0.47 J	0.37 J	0.62 J
PCB119	ND U	ND U	ND U	ND U
PCB124	ND U	ND U	ND U	ND U
PCB128	0.39 J	ND U	ND U	ND U
PCB129	ND U	ND U	ND U	ND U
PCB130	ND U	ND U	ND U	ND U
PCB131	ND U	ND U	ND U	ND U
PCB132	0.53 J	0.29 J	0.15 J	0.24 J

Client Reporting Sample ID:	T-I-A-9	T-I-A-10	T-I-A-11	T-I-A-12
PCB134	ND U	ND U	ND U	ND U
PCB135/144	0.29 J	ND U	ND U	ND U
PCB136	0.34 J	0.37 J	ND U	ND U
PCB137	ND U	ND U	ND U	ND U
PCB138/160/163	1.55	0.86 J	ND U	0.82 J
PCB141	0.29 J	ND U	ND U	ND U
PCB146	0.28 J	ND U	ND U	ND U
PCB149	1.30	0.97 J	0.37 J	0.55 J
PCB151	0.53 J	ND U	ND U	ND U
PCB153	1.08	0.57 J	0.30 J	0.53 J
PCB156	0.17 J	ND U	ND U	ND U
PCB158	ND U	ND U	ND U	ND U
PCB167	ND U	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	0.29 J	ND U	ND U	ND U
PCB171	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	0.50 J	ND U	ND U	ND U
PCB175	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	ND U	ND U
PCB177	0.22 J	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U
PCB180	0.58 J	0.31 J	ND U	ND U
PCB183	0.23 J	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U
PCB187/182	0.47 J	0.43 J	ND U	ND U
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	0.90 J	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	0.14 J	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	0.18 J	0.21 J	ND U	0.16 J

Surrogate Recovery (%)				
PCB104	68	69	61	69
PCB14	51	56	45	54
PCB34	52	54	45	52
PCB112	65	66	57	66

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-I-A-9	T-I-A-10	T-I-A-11	T-I-A-12
Cl 1	2.14	6.87	1.18	2.61
Cl 2	8.59	24.60	4.44	9.14
Cl 3	14.95	13.38	4.31	10.32
Cl 4	32.14	14.36	8.11	15.76
Cl 5	13.22	5.31	1.92	4.72
Cl 6	6.75	3.05	0.82	2.13
Cl 7	2.30	0.74	0.00	0.00
Cl 8	0.00	0.90	0.00	0.00
Cl 9	0.14	0.00	0.00	0.00
Cl 10	0.18	0.21	0.00	0.16
SUM PCB	80.84	69.71	21.04	45.38

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Core/Site: TIA

Client Reporting Sample ID:	T-I-A-13	T-I-A-14	T-I-A-15	T-I-A-16
Battelle Sample ID:	W2789	W2790	W2791	W2792-1
Extraction Batch ID:	01-222	01-222	01-222	01-480
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	32.92	35.16	34.05	34.72
Sample Dry Weight (g):	11.06	10.37	11.03	9.83
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.45 J	3.77	0.29 J	0.45 J
PCB1	0.98	ND U	0.42 J	0.11 J
PCB3	0.17 J	ND U	ND U	ND U
PCB4/10	2.82	0.68 J	1.50	0.46 J
PCB6	0.14 J	ND U	ND U	ND U
PCB7/9	ND U	ND U	0.28 J	ND U
PCB8/5	0.65 J	ND U	0.24 J	0.12 J
PCB12/13	ND U	ND U	ND U	ND U
PCB16/32	0.61 J	0.25 J	0.27 J	0.13 J
PCB17	0.65 J	0.17 J	0.12 J	0.11 J
PCB18	0.69 J	0.25 J	0.17 J	0.12 J
PCB19	0.80 J	0.32 J	0.47 J	0.19 J
PCB21	ND U	ND U	ND U	ND U
PCB22	ND U	ND U	ND U	ND U
PCB24/27	0.26 J	0.09 J	ND U	0.07 J
PCB25	ND U	ND U	ND U	ND U
PCB26	ND U	ND U	ND U	ND U
PCB28	0.46 J	ND U	ND U	ND U
PCB29	ND U	ND U	ND U	ND U
PCB31	0.34 J	ND U	ND U	ND U
PCB33/20	ND U	ND U	ND U	ND U
PCB40	1.09	ND U	ND U	1.01
PCB41/64/71	0.41 J	ND U	ND U	ND U
PCB42	ND U	ND U	ND U	ND U
PCB43	ND U	ND U	ND U	ND U
PCB44	0.41 J	ND U	ND U	ND U
PCB45	ND U	ND U	ND U	ND U
PCB46	ND U	ND U	ND U	ND U
PCB47/75	0.60 J	ND U	ND U	ND U
PCB48	ND U	ND U	ND U	ND U
PCB49	0.67 J	ND U	0.12 J	ND U
PCB51	0.37 J	0.14 J	0.16 J	0.13 J
PCB52	0.79 J	0.18 J	0.27 J	0.20 J
PCB53	0.48 J	0.12 J	0.19 J	ND U
PCB56/60	0.28 J	ND U	ND U	ND U
PCB59	ND U	ND U	ND U	ND U
PCB63	ND U	ND U	ND U	ND U
PCB66	0.34 J	ND U	ND U	ND U
PCB70/76	0.40 J	ND U	ND U	ND U
PCB74	0.25 J	ND U	ND U	ND U
PCB82	ND U	ND U	ND U	ND U
PCB83	ND U	ND U	ND U	ND U
PCB84	ND U	ND U	ND U	ND U
PCB85	ND U	ND U	ND U	ND U
PCB87/115	ND U	ND U	ND U	0.28 J
PCB89	ND U	ND U	ND U	ND U
PCB91	ND U	ND U	ND U	ND U
PCB92	ND U	ND U	ND U	ND U
PCB95	0.41 J	ND U	ND U	ND U
PCB97	ND U	ND U	ND U	ND U
PCB99	0.19 J	ND U	ND U	ND U
PCB100	ND U	ND U	ND U	ND U
PCB101/90	0.29 J	ND U	ND U	ND U
PCB105	ND U	ND U	ND U	ND U
PCB107	ND U	ND U	ND U	ND U
PCB110	0.48 J	ND U	ND U	ND U
PCB114	ND U	ND U	ND U	ND U
PCB118	0.16 J	ND U	ND U	ND U
PCB119	ND U	ND U	ND U	ND U
PCB124	ND U	ND U	ND U	ND U
PCB128	ND U	ND U	ND U	ND U
PCB129	ND U	ND U	ND U	ND U
PCB130	ND U	ND U	ND U	ND U
PCB131	ND U	ND U	ND U	ND U
PCB132	ND U	ND U	ND U	ND U

Client Reporting Sample ID:	T-I-A-13	T-I-A-14	T-I-A-15	T-I-A-16
PCB134	ND U	ND U	ND U	ND U
PCB135/144	ND U	ND U	ND U	ND U
PCB136	ND U	ND U	ND U	ND U
PCB137	ND U	ND U	ND U	ND U
PCB138/160/163	ND U	ND U	ND U	ND U
PCB141	ND U	ND U	ND U	ND U
PCB146	ND U	ND U	ND U	ND U
PCB149	0.20 J	ND U	ND U	ND U
PCB151	ND U	ND U	ND U	ND U
PCB153	0.15 J	ND U	ND U	ND U
PCB156	ND U	ND U	ND U	ND U
PCB158	ND U	ND U	ND U	ND U
PCB167	ND U	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	ND U	ND U
PCB171	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	ND U	ND U
PCB175	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	ND U	ND U
PCB177	ND U	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U
PCB180	ND U	ND U	ND U	ND U
PCB183	ND U	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U
PCB187/182	ND U	ND U	ND U	ND U
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	0.17 J	0.21 J	ND U	ND U

Surrogate Recovery (%)				
PCB104	76	72	68	78
PCB14	62	56	54	64
PCB34	60	57	53	62
PCB112	73	72	60	72

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-I-A-13	T-I-A-14	T-I-A-15	
Cl 1	1.15	0.00	0.42	0.11
Cl 2	3.61	0.68	2.03	0.58
Cl 3	3.81	1.08	1.02	0.62
Cl 4	6.10	0.44	0.74	1.35
Cl 5	1.53	0.00	0.00	0.28
Cl 6	0.35	0.00	0.00	0.00
Cl 7	0.00	0.00	0.00	0.00
Cl 8	0.00	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.17	0.21	0.00	0.00
SUM PCB	17.16	6.18	4.51	3.39

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Core/Site: TIA

Client Reporting Sample ID:	T-I-A-18	T-I-A-19	T-I-A-20
Battelle Sample ID:	W2794	W2795	W2796
Extraction Batch ID:	01-222	01-222	01-222
Batch Matrix:	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667
Sample Moisture Content (%):	33.60	32.02	34.44
Sample Dry Weight (g):	10.86	10.41	10.73
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB			
Biphenyl	0.21 J	0.18 J	0.22 J
PCB1	0.10 J	0.51 J	0.48 J
PCB3	ND U	ND U	ND U
PCB4/10	0.57 J	1.42	1.26
PCB6	ND U	ND U	ND U
PCB7/9	0.24 J	0.10 J	0.13 J
PCB8/5	0.14 J	0.32 J	0.23 J
PCB12/13	ND U	ND U	ND U
PCB16/32	ND U	0.15 J	0.29 J
PCB17	ND U	ND U	ND U
PCB18	ND U	ND U	ND U
PCB19	0.14 J	0.37 J	0.32 J
PCB21	ND U	ND U	ND U
PCB22	ND U	ND U	ND U
PCB24/27	ND U	0.16 J	ND U
PCB25	ND U	ND U	ND U
PCB26	ND U	ND U	ND U
PCB28	ND U	ND U	ND U
PCB29	ND U	ND U	ND U
PCB31	ND U	ND U	ND U
PCB33/20	ND U	ND U	ND U
PCB40	ND U	ND U	0.85
PCB41/64/71	ND U	ND U	ND U
PCB42	ND U	ND U	ND U
PCB43	ND U	ND U	ND U
PCB44	ND U	ND U	ND U
PCB45	ND U	ND U	ND U
PCB46	ND U	ND U	ND U
PCB47/75	ND U	ND U	ND U
PCB48	ND U	ND U	ND U
PCB49	0.15 J	ND U	ND U
PCB51	0.17 J	0.21 J	0.16 J
PCB52	0.28 J	0.23 J	0.21 J
PCB53	0.09 J	0.23 J	0.18 J
PCB56/60	ND U	ND U	ND U
PCB59	ND U	ND U	ND U
PCB63	ND U	ND U	ND U
PCB66	ND U	ND U	ND U
PCB70/76	ND U	ND U	ND U
PCB74	ND U	ND U	ND U
PCB82	ND U	ND U	ND U
PCB83	ND U	ND U	ND U
PCB84	ND U	ND U	ND U
PCB85	ND U	ND U	ND U
PCB87/115	ND U	ND U	ND U
PCB89	ND U	ND U	ND U
PCB91	ND U	ND U	ND U
PCB92	ND U	ND U	ND U
PCB95	ND U	ND U	ND U
PCB97	ND U	ND U	ND U
PCB99	ND U	ND U	ND U
PCB100	ND U	ND U	ND U
PCB101/90	ND U	ND U	ND U
PCB105	ND U	ND U	ND U
PCB107	ND U	ND U	ND U
PCB110	ND U	ND U	ND U
PCB114	ND U	ND U	ND U
PCB118	ND U	ND U	ND U
PCB119	ND U	ND U	ND U
PCB124	ND U	ND U	ND U
PCB128	ND U	ND U	ND U
PCB129	ND U	ND U	ND U
PCB130	ND U	ND U	ND U
PCB131	ND U	ND U	ND U
PCB132	ND U	ND U	ND U

Client Reporting Sample ID:	T-I-A-18	T-I-A-19	T-I-A-20
PCB134	ND U	ND U	ND U
PCB135/144	ND U	ND U	ND U
PCB136	ND U	ND U	ND U
PCB137	ND U	ND U	ND U
PCB138/160/163	ND U	ND U	ND U
PCB141	ND U	ND U	ND U
PCB146	ND U	ND U	ND U
PCB149	ND U	ND U	ND U
PCB151	ND U	ND U	ND U
PCB153	ND U	ND U	ND U
PCB156	ND U	ND U	ND U
PCB158	ND U	ND U	ND U
PCB167	ND U	ND U	ND U
PCB169	ND U	ND U	ND U
PCB170/190	ND U	ND U	ND U
PCB171	ND U	ND U	ND U
PCB172	ND U	ND U	ND U
PCB173	ND U	ND U	ND U
PCB174	ND U	ND U	ND U
PCB175	ND U	ND U	ND U
PCB176	ND U	ND U	ND U
PCB177	ND U	ND U	ND U
PCB178	ND U	ND U	ND U
PCB180	ND U	ND U	ND U
PCB183	ND U	ND U	ND U
PCB184	ND U	ND U	ND U
PCB185	ND U	ND U	ND U
PCB187/182	ND U	ND U	ND U
PCB189	ND U	ND U	ND U
PCB191	ND U	ND U	ND U
PCB193	ND U	ND U	ND U
PCB194	ND U	ND U	ND U
PCB195	ND U	ND U	ND U
PCB197	ND U	ND U	ND U
PCB198	ND U	ND U	ND U
PCB199	ND U	ND U	ND U
PCB200	ND U	ND U	ND U
PCB201	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U
PCB205	ND U	ND U	ND U
PCB206	ND U	ND U	ND U
PCB207	ND U	ND U	ND U
PCB209	ND U	ND U	ND U

Surrogate Recovery (%)			
PCB104	66	61	67
PCB14	50	47	53
PCB34	49	45	51
PCB112	58	57	61

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-I-A-18	T-I-A-19	T-I-A-20
Cl 1	0.10	0.51	0.48
Cl 2	0.95	1.84	1.61
Cl 3	0.14	0.68	0.61
Cl 4	0.69	0.66	1.40
Cl 5	0.00	0.00	0.00
Cl 6	0.00	0.00	0.00
Cl 7	0.00	0.00	0.00
Cl 8	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00
SUM PCB	2.09	3.87	4.33

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Core/Site: TIB

Client Reporting Sample ID:	T-I-B-1	T-I-B-2	T-I-B-3	T-I-B-4
Battelle Sample ID:	W2757	W2758	W2759	W2760
Extraction Batch ID:	01-221	01-221	01-221	01-221
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	71.50	66.48	63.26	59.04
Sample Dry Weight (g):	4.01	5.62	5.53	5.76
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	1.25 J	1.74 J	3.87	10.94
PCB1	56.26	444.80 D	927.78 D	1112.34 D
PCB3	9.06	102.15	243.62 Y	252.41 Y
PCB4/10	114.54	1233.90 D	3188.82 D	3586.99 D
PCB6	5.04	45.72	86.45	68.35
PCB7/9	2.54	11.70	15.32	9.56
PCB8/5	40.25	290.86 Y	708.40 D	589.29 D
PCB12/13	ND U	1.34 J	2.48	3.87
PCB16/32	93.71	348.83 Y	785.33 D	338.13 D
PCB17	46.55	204.14	361.42 D	9678.93
PCB18	17.08	102.24	153.83	66.27
PCB19	63.19	289.88 Y	951.16 D	1468.08 D
PCB21	ND U	ND U	ND U	ND U
PCB22	1.98 J	3.26	3.17	1.76
PCB24/27	38.04	101.14	244.73 Y	384.86 Y
PCB25	5.66	37.73	54.63	8.37
PCB26	10.93	57.94	120.13	69.77
PCB28	28.10	17.98	14.90	13.58
PCB29	ND U	0.33 J	1.67	3.02
PCB31	18.70	62.05	109.43	76.34
PCB33/20	9.80	5.30	1.91	6.62
PCB40	3.48	18.77	50.99	70.79
PCB41/64/71	33.64	91.75	192.03	96.54
PCB42	14.53	18.63	23.57	4.12
PCB43	ND U	ND U	ND U	ND U
PCB44	27.88	23.97	18.77	7.00
PCB45	6.49	9.97	17.17	26.11
PCB46	2.37	3.14	5.17	3.93
PCB47/75	98.34	225.53	457.25 D	384.85 Y
PCB48	ND U	ND U	ND U	ND U
PCB49	81.96	261.38 Y	383.22 D	203.79
PCB51	42.52	118.87	347.66 Y	419.89 D
PCB52	86.20	261.07 Y	416.16 D	321.37 Y
PCB53	54.29	186.45	431.09 D	384.68 D
PCB56/60	13.21	6.93	2.95	3.17
PCB59	3.70	4.62	6.88	12.28
PCB63	2.88	1.52 J	0.94 J	0.59 J
PCB66	46.46	34.02	17.01	7.58
PCB70/76	24.65	21.34	13.31	14.13
PCB74	26.07	27.09	24.74	8.13
PCB82	ND U	1.27 J	0.67 J	0.60 J
PCB83	5.42	2.40	2.94	1.69
PCB84	14.74	24.21	46.06	32.90
PCB85	5.95	1.61 J	2.52	ND U
PCB87/115	6.59	2.95	2.56	1.18 J
PCB89	ND U	ND U	ND U	ND U
PCB91	33.43	57.87	156.97	212.70 Y
PCB92	13.24	10.52	12.54	13.43
PCB95	64.07	124.40	297.27 Y	375.30 Y
PCB97	11.83	8.96	7.22	2.14
PCB99	46.10	49.15	48.70	18.76
PCB100	5.36	12.98	38.22	70.94
PCB101/90	52.78	54.77	66.61	52.75
PCB105	5.31	2.37	1.79 J	1.15 J
PCB107	4.63	3.75	4.38	4.20
PCB110	111.83	157.55	268.22 Y	385.61 Y
PCB114	ND U	ND U	ND U	ND U
PCB118	43.97	49.43	51.83	32.43
PCB119	7.83	11.07	19.57	15.65
PCB124	ND U	0.30 J	0.18 J	ND U
PCB128	7.02	6.62	6.73	1.82
PCB129	ND U	0.44 J	0.31 J	0.13 J

Client Reporting Sample ID:	T-I-B-1	T-I-B-2	T-I-B-3	T-I-B-4
PCB130	2.61	3.25	4.26	2.24
PCB131	ND U	ND U	ND U	ND U
PCB132	11.93	10.61	12.85	8.57
PCB134	3.53	3.08	4.48	4.76
PCB135/144	14.00	15.22	24.18	32.51
PCB136	10.03	16.73	41.50	68.69
PCB137	ND U	0.89 J	0.79 J	0.40 J
PCB138/160/163	45.90	52.72	81.36	83.55
PCB141	1.46 J	1.53 J	1.16 J	0.60 J
PCB146	13.06	15.45	25.70	36.07
PCB149	58.34	82.61	145.44	179.65
PCB151	13.80	14.04	17.93	20.11
PCB153	53.45	75.42	105.72	86.93
PCB156	2.97	2.06	2.60	1.51 J
PCB158	1.05 J	1.63 J	2.00	0.56 J
PCB167	1.04 J	1.32 J	1.71 J	0.56 J
PCB169	ND U	ND U	ND U	ND U
PCB170/190	5.84	7.44	11.62	6.22
PCB171	3.18	2.94	4.67	2.71
PCB172	0.53 J	0.54 J	0.76 J	0.57 J
PCB173	ND U	ND U	ND U	ND U
PCB174	4.99	5.31	7.01	5.40
PCB175	ND U	0.38 J	0.83 J	0.27 J
PCB176	1.64 J	1.32 J	2.50	2.58
PCB177	7.19	8.97	14.53	21.09
PCB178	3.18	4.04	7.94	13.01
PCB180	6.47	10.12	15.00	7.70
PCB183	1.42 J	3.46	5.18	1.90
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	0.29 J	0.61 J	0.16 J
PCB187/182	10.94	17.84	34.59	50.75
PCB189	ND U	0.41 J	0.67 J	0.52 J
PCB191	ND U	0.31 J	0.42 J	0.24 J
PCB193	ND U	1.11 J	1.76	3.25
PCB194	ND U	2.88	5.24	5.84
PCB195	ND U	1.04 J	2.30	2.67
PCB197	ND U	0.39 J	0.52 J	0.76 J
PCB198	ND U	0.22 J	0.47 J	0.74 J
PCB199	3.62	4.31	6.84	10.13
PCB200	ND U	0.75 J	0.92 J	0.83 J
PCB201	ND U	0.76 J	1.36 J	2.24
PCB203/196	1.46 J	3.14	4.86	4.82
PCB205	ND U	0.23 J	0.37 J	0.72 J
PCB206	1.30 J	2.06	3.88	7.57
PCB207	ND U	0.35 J	0.68 J	1.08 J
PCB209	ND U	0.67 J	1.11 J	2.35

Surrogate Recovery (%)				
PCB104	84	77	74	70
PCB14	68	64	59	51
PCB34	56	68	71	85
PCB112	87	82	65	52

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicacle.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-I-B-1	T-I-B-2	T-I-B-3	T-I-B-4
Cl 1	65.32	546.95	1171.40	1364.75
Cl 2	162.37	1583.52	4001.48	4258.06
Cl 3	333.74	1230.84	2802.33	12115.73
Cl 4	568.67	1315.06	2408.91	1968.96
Cl 5	433.10	575.57	1028.25	1221.43
Cl 6	240.19	303.63	478.73	528.64
Cl 7	45.37	64.48	108.06	116.35
Cl 8	5.09	13.70	22.87	28.74
Cl 9	1.30	2.40	4.55	8.66
Cl 10	0.00	0.67	1.11	2.35
SUM PCB	1856.40	5638.55	12031.56	21624.61

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Core/Site: TIB

Client Reporting Sample ID:	T-I-B-5	T-I-B-6	T-I-B-7	T-I-B-8
Battelle Sample ID:	W2761	W2762-1	W2763-1	W2764-1
Extraction Batch ID:	01-221	01-480	01-480	01-480
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	42.12	41.15	36.04	29.88
Sample Dry Weight (g):	8.92	9.29	9.93	10.59
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	8.77	1.78 J	0.68 J	0.28 J
PCB1	978.82 D	196.50 Y	5.06	3.24
PCB3	172.60	18.59	0.41 J	0.33 J
PCB4/10	2833.38 D	585.27 D	13.95	12.00
PCB6	100.27	52.63	0.71 J	0.40 J
PCB7/9	13.48	7.84	0.23 J	0.16 J
PCB8/5	544.38 D	157.82 Y	4.39	1.98
PCB12/13	6.17	6.42	ND U	ND U
PCB16/32	17144.70 Y	98.88	3.60	1.38
PCB17	176.66	137.74	3.49	0.88
PCB18	131.35	252.30 Y	7.98	1.15
PCB19	531.86 D	52.85	2.88	2.62
PCB21	ND U	53.74	ND U	ND U
PCB22	9.26	60.80	3.54	ND U
PCB24/27	182.29 Y	18.50	0.96	0.73 J
PCB25	26.77	60.78	0.82 J	0.23 J
PCB26	65.00	90.51	1.85	0.39 J
PCB28	42.92	255.21 Y	14.77	0.78 J
PCB29	0.78 J	0.54 J	ND U	ND U
PCB31	94.12	215.08 Y	8.92	0.72 J
PCB33/20	9.38	46.20	2.44	ND U
PCB40	15.95	4.76	1.31	0.99
PCB41/64/71	60.82	213.56 Y	11.57	1.16
PCB42	19.37	74.39	3.43	0.34 J
PCB43	ND U	ND U	ND U	ND U
PCB44	30.77	178.09 Y	10.15	0.75 J
PCB45	18.21	32.34	1.69	0.16 J
PCB46	6.03	8.88	0.51 J	ND U
PCB47/75	131.83	92.12	3.86	0.79 J
PCB48	ND U	42.59	3.00	ND U
PCB49	133.99	267.04 Y	11.69	1.51
PCB51	121.50	14.81	0.87 J	0.58 J
PCB52	192.77 Y	372.63 D	14.93	2.09
PCB53	202.58 Y	48.37	2.20	0.91
PCB56/60	15.45	168.66 Y	10.95	0.68 J
PCB59	7.14	18.17	1.10	0.17 J
PCB63	1.68	6.97	0.47 J	ND U
PCB66	33.61	234.82 Y	13.04	0.84 J
PCB70/76	29.02	204.98 Y	12.48	0.88 J
PCB74	22.14	161.28	6.67	0.54 J
PCB82	1.84	13.88	0.87 J	ND U
PCB83	3.02	5.57	ND U	ND U
PCB84	26.49	30.93	1.38	0.25 J
PCB85	4.34	20.53	1.30	ND U
PCB87/115	5.48	42.28	2.65	ND U
PCB89	ND U	ND U	ND U	ND U
PCB91	63.91	21.79	1.15	0.31 J
PCB92	12.06	15.41	1.03	0.17 J
PCB95	104.76	94.02	4.72	0.88 J
PCB97	5.57	34.76	1.78	ND U
PCB99	25.69	55.04	2.65	0.48 J
PCB100	9.99	1.04	ND U	ND U
PCB101/90	32.81	105.50	5.25	0.66 J
PCB105	4.87	35.93	1.55	0.19 J
PCB107	4.71	5.49	0.34 J	ND U
PCB110	180.20	148.49	6.52	1.21
PCB114	0.43 J	1.68	0.20 J	ND U
PCB118	30.63	92.67	3.87	0.48 J
PCB119	6.52	2.21	ND U	ND U
PCB124	0.36 J	2.03	ND U	ND U
PCB128	7.73	14.62	0.87 J	ND U
PCB129	0.81 J	2.94	0.25 J	ND U

Client Reporting Sample ID:	T-I-B-5	T-I-B-6	T-I-B-7	T-I-B-8
PCB130	5.43	3.66	0.31 J	ND U
PCB131	0.22 J	0.80 J	ND U	ND U
PCB132	25.51	21.65	1.23	0.36 J
PCB134	4.75	3.27	0.25 J	ND U
PCB135/144	15.65	9.06	0.66 J	ND U
PCB136	25.08	8.75	0.58 J	0.22 J
PCB137	1.60	2.84	ND U	ND U
PCB138/160/163	54.65	79.63	4.14	0.92 J
PCB141	2.33	8.72	0.76 J	ND U
PCB146	10.13	7.15	0.44 J	0.19 J
PCB149	121.29	52.15	2.86	0.78 J
PCB151	16.94	10.92	0.87 J	0.18 J
PCB153	34.57	48.85	2.73	0.54 J
PCB156	3.43	5.68	0.34 J	ND U
PCB158	2.30	5.99	0.39 J	ND U
PCB167	1.10 J	2.45	0.15 J	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	13.00	11.78	0.79 J	ND U
PCB171	3.71	2.94	0.30 J	ND U
PCB172	0.72 J	0.59 J	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	5.92	10.44	1.02	ND U
PCB175	0.51 J	ND U	ND U	ND U
PCB176	1.87	0.97	ND U	ND U
PCB177	10.55	6.27	0.56 J	ND U
PCB178	3.08	1.84	0.32 J	ND U
PCB180	15.22	17.80	1.39	0.19 J
PCB183	4.55	4.27	0.40 J	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	0.41 J	1.05	0.13 J	ND U
PCB187/182	16.61	10.16	0.96 J	0.25 J
PCB189	0.62 J	0.35 J	ND U	ND U
PCB191	0.53 J	0.29 J	ND U	ND U
PCB193	1.02	0.89 J	0.16 J	ND U
PCB194	3.61	3.22	0.37 J	ND U
PCB195	1.81	1.78	ND U	ND U
PCB197	0.26 J	0.14 J	ND U	ND U
PCB198	0.52 J	0.26 J	ND U	ND U
PCB199	4.04	4.34	0.43 J	ND U
PCB200	0.64 J	0.57 J	ND U	ND U
PCB201	0.78 J	0.52 J	ND U	ND U
PCB203/196	4.30	4.04	0.43 J	ND U
PCB205	0.24 J	ND U	ND U	ND U
PCB206	4.19	2.07	0.32 J	ND U
PCB207	0.55 J	0.28 J	ND U	ND U
PCB209	1.15	0.55 J	0.15 J	0.05 J

Surrogate Recovery (%)				
PCB104	69	69	76	77
PCB14	62	60	61	64
PCB34	72	60	59	60
PCB112	47	72	74	72

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicacle.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-I-B-5	T-I-B-6	T-I-B-7	T-I-B-8
Cl 1	1151.41	215.08	5.48	3.56
Cl 2	3497.67	809.97	19.27	14.55
Cl 3	18415.08	1343.16	51.27	8.87
Cl 4	1042.85	2144.46	109.90	12.38
Cl 5	523.69	729.26	35.26	4.63
Cl 6	333.52	289.13	16.83	3.19
Cl 7	78.31	69.63	6.04	0.43
Cl 8	16.21	14.87	1.23	0.00
Cl 9	4.74	2.35	0.32	0.00
Cl 10	1.15	0.55	0.15	0.05
SUM PCB	25073.43	5620.25	246.43	47.96

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Core/Site: TIB

Client Reporting Sample ID:	T-I-B-9	T-I-B-10	T-I-B-11	T-I-B-12
Battelle Sample ID:	W2765-1	W2766-1	W2767	W2768-1
Extraction Batch ID:	01-480	01-480	01-221	01-480
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	30.20	25.80	32.25	29.41
Sample Dry Weight (g):	10.53	11.78	9.78	10.96
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.52 J	0.28 J	0.19 J	0.23 J
PCB1	0.49 J	0.37 J	0.65 J	0.11 J
PCB3	0.08 J	ND U	ND U	ND U
PCB4/10	2.13 J	1.43	1.82	0.48 J
PCB6	0.08 J	0.07 J	ND U	ND U
PCB7/9	ND U	ND U	ND U	0.14 J
PCB8/5	0.38 J	0.30 J	ND U	0.10 J
PCB12/13	ND U	ND U	ND U	ND U
PCB16/32	0.33 J	0.25 J	ND U	0.11 J
PCB17	0.19 J	0.24 J	ND U	0.06 J
PCB18	0.24 J	0.32 J	0.96 J	0.09 J
PCB19	0.75 J	0.40 J	ND U	0.16 J
PCB21	ND U	ND U	ND U	ND U
PCB22	ND U	ND U	ND U	ND U
PCB24/27	0.19 J	0.16 J	ND U	ND U
PCB25	ND U	ND U	ND U	ND U
PCB26	ND U	ND U	ND U	ND U
PCB28	0.13 J	0.31 J	1.22	ND U
PCB29	ND U	ND U	ND U	ND U
PCB31	0.16 J	0.25 J	0.79 J	ND U
PCB33/20	ND U	ND U	ND U	ND U
PCB40	0.90	0.71 J	ND U	0.78 J
PCB41/64/71	0.25 J	0.41 J	ND U	0.08 J
PCB42	ND U	0.16 J	ND U	ND U
PCB43	ND U	ND U	ND U	ND U
PCB44	0.15 J	0.33 J	ND U	ND U
PCB45	ND U	ND U	ND U	ND U
PCB46	ND U	ND U	ND U	ND U
PCB47/75	0.22 J	0.22 J	1.08	ND U
PCB48	ND U	ND U	ND U	ND U
PCB49	0.25 J	0.48 J	1.37	ND U
PCB51	0.21 J	0.19 J	ND U	0.10 J
PCB52	0.43 J	0.70 J	1.61	0.21 J
PCB53	0.20 J	0.18 J	ND U	ND U
PCB56/60	ND U	0.29 J	ND U	ND U
PCB59	ND U	ND U	ND U	ND U
PCB63	ND U	ND U	ND U	ND U
PCB66	0.14 J	0.45 J	1.39	0.08 J
PCB70/76	0.17 J	0.43 J	0.99 J	0.06 J
PCB74	0.11 J	0.24 J	ND U	ND U
PCB82	ND U	ND U	ND U	ND U
PCB83	ND U	ND U	ND U	ND U
PCB84	ND U	0.16 J	ND U	ND U
PCB85	ND U	ND U	ND U	ND U
PCB87/115	ND U	ND U	ND U	ND U
PCB89	ND U	ND U	ND U	ND U
PCB91	ND U	0.13 J	ND U	ND U
PCB92	ND U	ND U	ND U	ND U
PCB95	0.24 J	0.29 J	ND U	ND U
PCB97	ND U	ND U	ND U	ND U
PCB99	ND U	0.17 J	ND U	ND U
PCB100	ND U	ND U	ND U	ND U
PCB101/90	ND U	0.35 J	ND U	ND U
PCB105	ND U	ND U	ND U	ND U
PCB107	ND U	ND U	ND U	ND U
PCB110	0.29 J	0.51 J	ND U	ND U
PCB114	ND U	ND U	ND U	ND U
PCB118	ND U	0.22 J	ND U	ND U
PCB119	ND U	ND U	ND U	ND U
PCB124	ND U	ND U	ND U	ND U
PCB128	ND U	ND U	ND U	ND U
PCB129	ND U	ND U	ND U	ND U

Client Reporting Sample ID:	T-I-B-9	T-I-B-10	T-I-B-11	T-I-B-12
PCB130	ND U	ND U	ND U	ND U
PCB131	ND U	ND U	ND U	ND U
PCB132	ND U	0.11 J	ND U	ND U
PCB134	ND U	ND U	ND U	ND U
PCB135/144	ND U	ND U	ND U	ND U
PCB136	ND U	ND U	ND U	ND U
PCB137	ND U	ND U	ND U	ND U
PCB138/160/163	ND U	ND U	ND U	ND U
PCB141	ND U	ND U	ND U	ND U
PCB146	ND U	ND U	ND U	ND U
PCB149	0.20 J	0.29 J	ND U	ND U
PCB151	ND U	ND U	ND U	ND U
PCB153	0.13 J	0.25 J	ND U	ND U
PCB156	ND U	ND U	ND U	ND U
PCB158	ND U	ND U	ND U	ND U
PCB167	ND U	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	ND U	ND U
PCB171	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	ND U	ND U
PCB175	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	ND U	ND U
PCB177	ND U	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U
PCB180	ND U	ND U	ND U	ND U
PCB183	ND U	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U
PCB187/182	ND U	ND U	ND U	ND U
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	0.07 J	0.04 J	ND U	0.07 J

Surrogate Recovery (%)				
PCB104	72	71	75	74
PCB14	62	61	62	64
PCB34	58	57	47	60
PCB112	69	67	56	70

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicacle.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-I-B-9	T-I-B-10	T-I-B-11	T-I-B-12
Cl 1	0.57	0.37	0.65	0.11
Cl 2	2.60	1.80	1.82	0.71
Cl 3	1.97	1.93	2.97	0.43
Cl 4	3.02	4.79	6.43	1.32
Cl 5	0.53	1.83	0.00	0.00
Cl 6	0.32	0.64	0.00	0.00
Cl 7	0.00	0.00	0.00	0.00
Cl 8	0.00	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.07	0.04	0.00	0.07
SUM PCB	9.61	11.68	12.06	2.87

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Core/Site: TIB

Client Reporting Sample ID:	T-I-A-13	T-I-B-14	T-I-B-15	T-I-B-16
Battelle Sample ID:	W2769-1	W2770-1	W2771-R	W2772
Extraction Batch ID:	01-480	01-480	01-221	01-221
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	4.168	1.667
Sample Moisture Content (%):	31.99	32.64	32.73	31.85
Sample Dry Weight (g):	10.86	10.41	12.26	11.23
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.37 J	0.48 J	1.85 J	0.28 J
PCB1	0.08 J	0.12 J	0.20 J	0.34 J
PCB3	ND U	ND U	0.05 J	ND U
PCB4/10	0.34 J	0.52 J	0.67 J	1.31
PCB6	ND U	ND U	ND U	ND U
PCB7/9	ND U	0.08 J	0.38 J	ND U
PCB8/5	0.10 J	0.13 J	0.31 J	0.21 J
PCB12/13	ND U	ND U	ND U	ND U
PCB16/32	ND U	0.10 J	0.57 J	0.22 J
PCB17	ND U	0.10 J	0.25 J	ND U
PCB18	ND U	0.06 J	0.15 J	ND U
PCB19	0.14 J	0.18 J	0.49 J	0.48 J
PCB21	ND U	ND U	ND U	ND U
PCB22	ND U	ND U	ND U	ND U
PCB24/27	0.05 J	0.06 J	0.23 J	ND U
PCB25	ND U	ND U	ND U	ND U
PCB26	ND U	ND U	ND U	ND U
PCB28	ND U	ND U	ND U	ND U
PCB29	ND U	ND U	ND U	ND U
PCB31	ND U	ND U	ND U	ND U
PCB33/20	ND U	ND U	ND U	ND U
PCB40	0.82 J	0.83 J	ND U	0.88
PCB41/64/71	ND U	ND U	ND U	ND U
PCB42	ND U	ND U	ND U	ND U
PCB43	ND U	ND U	ND U	ND U
PCB44	ND U	ND U	ND U	ND U
PCB45	ND U	ND U	ND U	ND U
PCB46	ND U	ND U	ND U	ND U
PCB47/75	ND U	ND U	0.22 J	ND U
PCB48	ND U	ND U	ND U	ND U
PCB49	0.09 J	ND U	0.29 J	ND U
PCB51	0.14 J	0.14 J	0.35 J	0.18 J
PCB52	0.18 J	0.21 J	0.50 J	ND U
PCB53	0.05 J	0.06 J	0.26 J	0.20 J
PCB56/60	ND U	ND U	ND U	ND U
PCB59	ND U	ND U	ND U	ND U
PCB63	ND U	ND U	ND U	ND U
PCB66	ND U	ND U	ND U	ND U
PCB70/76	ND U	ND U	ND U	ND U
PCB74	ND U	ND U	ND U	ND U
PCB82	ND U	ND U	ND U	ND U
PCB83	ND U	ND U	ND U	ND U
PCB84	ND U	ND U	ND U	ND U
PCB85	ND U	ND U	ND U	ND U
PCB87/115	ND U	ND U	ND U	ND U
PCB89	ND U	ND U	ND U	ND U
PCB91	ND U	ND U	ND U	ND U
PCB92	ND U	ND U	ND U	ND U
PCB95	ND U	ND U	0.25 J	ND U
PCB97	ND U	ND U	ND U	ND U
PCB99	ND U	ND U	ND U	ND U
PCB100	ND U	ND U	ND U	ND U
PCB101/90	ND U	ND U	ND U	ND U
PCB105	ND U	ND U	ND U	ND U
PCB107	ND U	ND U	ND U	ND U
PCB110	ND U	ND U	ND U	ND U
PCB114	ND U	ND U	ND U	ND U
PCB118	ND U	ND U	ND U	ND U
PCB119	ND U	ND U	ND U	ND U
PCB124	ND U	ND U	ND U	ND U
PCB128	ND U	ND U	ND U	ND U
PCB129	ND U	ND U	ND U	ND U

Client Reporting Sample ID:	T-I-A-13	T-I-B-14	T-I-B-15	T-I-B-16
PCB130	ND U	ND U	ND U	ND U
PCB131	ND U	ND U	ND U	ND U
PCB132	ND U	ND U	ND U	ND U
PCB134	ND U	ND U	ND U	ND U
PCB135/144	ND U	ND U	ND U	ND U
PCB136	ND U	ND U	ND U	ND U
PCB137	ND U	ND U	ND U	ND U
PCB138/160/163	ND U	ND U	ND U	ND U
PCB141	ND U	ND U	ND U	ND U
PCB146	ND U	ND U	ND U	ND U
PCB149	ND U	ND U	ND U	ND U
PCB151	ND U	ND U	ND U	ND U
PCB153	ND U	ND U	ND U	ND U
PCB156	ND U	ND U	ND U	ND U
PCB158	ND U	ND U	ND U	ND U
PCB167	ND U	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	ND U	ND U
PCB171	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	ND U	ND U
PCB175	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	ND U	ND U
PCB177	ND U	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U
PCB180	ND U	ND U	ND U	ND U
PCB183	ND U	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U
PCB187/182	ND U	ND U	ND U	ND U
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	0.04 J	0.07 J	ND U	ND U

Surrogate Recovery (%)				
PCB104	69	73	69	68
PCB14	61	62	56	55
PCB34	57	58	54	52
PCB112	67	70	70	50

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicacle.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-I-A-13	T-I-B-14	T-I-B-15	T-I-B-16
Cl 1	0.08	0.12	0.25	0.34
Cl 2	0.45	0.72	1.37	1.51
Cl 3	0.18	0.51	1.70	0.71
Cl 4	1.28	1.23	1.62	1.27
Cl 5	0.00	0.00	0.25	0.00
Cl 6	0.00	0.00	0.00	0.00
Cl 7	0.00	0.00	0.00	0.00
Cl 8	0.00	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.04	0.07	0.00	0.00
SUM PCB	2.40	3.14	7.02	4.10

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Core/Site: TIB

Client Reporting Sample ID:	T-I-B-17	T-I-B-18	T-I-B-19	T-I-B-20
Battelle Sample ID:	W2773	W2774-R	W2775	W2776
Extraction Batch ID:	01-221	01-221	01-221	01-221
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	4.168	1.667	1.667
Sample Moisture Content (%):	31.80	35.86	35.00	34.18
Sample Dry Weight (g):	10.86	12.08	10.55	11.02
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.26 J	0.56 J	0.66 J	0.59 J
PCB1	0.38 J	ND U	ND U	ND U
PCB3	0.10 J	ND U	ND U	ND U
PCB4/10	1.34	ND U	ND U	ND U
PCB6	ND U	ND U	ND U	ND U
PCB7/9	0.35 J	ND U	0.35 J	ND U
PCB8/5	0.27 J	ND U	ND U	ND U
PCB12/13	ND U	ND U	ND U	ND U
PCB16/32	ND U	ND U	ND U	ND U
PCB17	ND U	ND U	ND U	ND U
PCB18	ND U	ND U	ND U	ND U
PCB19	0.54 J	ND U	ND U	ND U
PCB21	ND U	ND U	ND U	ND U
PCB22	ND U	ND U	ND U	ND U
PCB24/27	0.17 J	ND U	ND U	ND U
PCB25	ND U	ND U	ND U	ND U
PCB26	ND U	ND U	ND U	ND U
PCB28	ND U	ND U	ND U	ND U
PCB29	ND U	ND U	ND U	ND U
PCB31	ND U	ND U	ND U	ND U
PCB33/20	ND U	ND U	ND U	ND U
PCB40	0.93	ND U	1.02	ND U
PCB41/64/71	ND U	ND U	ND U	ND U
PCB42	ND U	ND U	ND U	ND U
PCB43	ND U	ND U	ND U	ND U
PCB44	ND U	ND U	ND U	ND U
PCB45	ND U	ND U	ND U	ND U
PCB46	ND U	ND U	ND U	ND U
PCB47/75	ND U	ND U	ND U	ND U
PCB48	ND U	ND U	ND U	ND U
PCB49	ND U	ND U	ND U	ND U
PCB51	0.25 J	ND U	ND U	ND U
PCB52	ND U	ND U	ND U	ND U
PCB53	ND U	ND U	ND U	ND U
PCB56/60	ND U	ND U	ND U	ND U
PCB59	ND U	ND U	ND U	ND U
PCB63	ND U	ND U	ND U	ND U
PCB66	ND U	ND U	ND U	ND U
PCB70/76	ND U	ND U	ND U	ND U
PCB74	ND U	ND U	ND U	ND U
PCB82	ND U	ND U	ND U	ND U
PCB83	ND U	ND U	ND U	ND U
PCB84	ND U	ND U	ND U	ND U
PCB85	ND U	ND U	ND U	ND U
PCB87/115	ND U	ND U	ND U	ND U
PCB89	ND U	ND U	ND U	ND U
PCB91	ND U	ND U	ND U	ND U
PCB92	ND U	ND U	ND U	ND U
PCB95	ND U	ND U	ND U	ND U
PCB97	ND U	ND U	ND U	ND U
PCB99	ND U	ND U	ND U	ND U
PCB100	ND U	ND U	ND U	ND U
PCB101/90	ND U	ND U	ND U	ND U
PCB105	ND U	ND U	ND U	ND U
PCB107	ND U	ND U	ND U	ND U
PCB110	ND U	ND U	ND U	ND U
PCB114	ND U	ND U	ND U	ND U
PCB118	ND U	ND U	ND U	ND U
PCB119	ND U	ND U	ND U	ND U
PCB124	ND U	ND U	ND U	ND U
PCB128	ND U	ND U	ND U	ND U
PCB129	ND U	ND U	ND U	ND U

Client Reporting Sample ID:	T-I-B-17	T-I-B-18	T-I-B-19	T-I-B-20
PCB130	ND U	ND U	ND U	ND U
PCB131	ND U	ND U	ND U	ND U
PCB132	ND U	ND U	ND U	ND U
PCB134	ND U	ND U	ND U	ND U
PCB135/144	ND U	ND U	ND U	ND U
PCB136	ND U	ND U	ND U	ND U
PCB137	ND U	ND U	ND U	ND U
PCB138/160/163	ND U	ND U	ND U	ND U
PCB141	ND U	ND U	ND U	ND U
PCB146	ND U	ND U	ND U	ND U
PCB149	ND U	ND U	ND U	ND U
PCB151	ND U	ND U	ND U	ND U
PCB153	ND U	ND U	ND U	ND U
PCB156	ND U	ND U	ND U	ND U
PCB158	ND U	ND U	ND U	ND U
PCB167	ND U	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	ND U	ND U
PCB171	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	ND U	ND U
PCB175	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	ND U	ND U
PCB177	ND U	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U
PCB180	ND U	ND U	ND U	ND U
PCB183	ND U	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U
PCB187/182	ND U	ND U	ND U	ND U
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U

Surrogate Recovery (%)				
PCB104	67	68	69	62
PCB14	56	59	58	59
PCB34	53	54	54	41
PCB112	52	64	45	51

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicacle.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-I-B-17	T-I-B-18	T-I-B-19	T-I-B-20
Cl 1	0.48	0.00	0.00	0.00
Cl 2	1.96	0.00	0.35	0.00
Cl 3	0.70	0.00	0.00	0.00
Cl 4	1.19	0.00	1.02	0.00
Cl 5	0.00	0.00	0.00	0.00
Cl 6	0.00	0.00	0.00	0.00
Cl 7	0.00	0.00	0.00	0.00
Cl 8	0.00	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00
SUM PCB	4.58	0.56	2.03	0.59

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Core/Site: TLA

Client Reporting Sample ID:	T-L-A-1	T-L-A-2	T-L-A-3	T-L-A-4
Battelle Sample ID:	W2629	W2630	W2631	W2632-1
Extraction Batch ID:	01-206	01-206	01-206	01-480
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	69.72	64.99	62.09	61.88
Sample Dry Weight (g):	4.74	5.37	5.46	5.79
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	3.71	2.33 J	2.21 J	1.39 J
PCB1	28.41	4.62	13.87	50.95
PCB3	5.02	1.58 J	5.58	34.48
PCB4/10	115.98	28.36	73.79	255.42 Y
PCB6	2.19	0.98 J	3.39	15.38
PCB7/9	0.53 J	0.32 J	1.07 J	4.52
PCB8/5	15.42	7.98	28.11	157.86
PCB12/13	0.30 J	0.22 J	0.57 J	2.44
PCB16/32	14.39	14.43	45.85	254.13 Y
PCB17	9.70	6.88	21.87	114.72
PCB18	4.58	3.49	9.98	43.11
PCB19	39.86	15.02	39.20	174.56
PCB21	ND U	ND U	ND U	ND U
PCB22	0.97 J	1.16 J	2.78	8.08
PCB24/27	11.52	6.56	19.60	101.69
PCB25	1.28 J	1.12 J	3.44	14.00
PCB26	3.03	2.40	7.41	34.31
PCB28	6.80	7.28	20.72	68.78
PCB29	ND U	ND U	0.17 J	0.87 J
PCB31	5.72	4.53	13.01	58.44
PCB33/20	1.95 J	2.08	6.61	17.82
PCB40	1.10 J	1.25 J	3.02	15.40
PCB41/64/71	8.52	9.50	24.55	79.08
PCB42	3.05	3.82	10.05	29.79
PCB43	ND U	ND U	ND U	ND U
PCB44	6.07	7.46	19.54	59.74
PCB45	1.72 J	1.65 J	4.17	14.82
PCB46	0.55 J	0.62 J	1.43 J	4.32
PCB47/75	13.49	11.29	34.91	176.73
PCB48	1.13 J	1.62 J	4.75	ND U
PCB49	15.96	15.70	45.75	178.30
PCB51	9.37	6.18	18.20	100.71
PCB52	17.14	15.94	43.42	181.10
PCB53	14.17	9.02	26.35	139.52
PCB56/60	5.24	5.58	13.54	33.38
PCB59	0.90 J	0.98 J	2.63	8.40
PCB63	0.70 J	0.84 J	2.18	8.17
PCB66	10.59	12.93	33.94	90.99
PCB70/76	7.23	8.38	22.60	63.09
PCB74	7.10	7.96	21.67	60.33
PCB82	1.08 J	1.67 J	3.35	7.46
PCB83	0.83 J	1.11 J	2.28	7.88
PCB84	3.05	3.42	8.16	30.01
PCB85	2.13	2.48	5.66	15.63
PCB87/115	3.71	3.96	9.31	20.08
PCB89	5.35	6.04	14.57	ND U
PCB91	5.26	4.32	11.84	59.30
PCB92	2.62	3.08	8.51	34.37
PCB95	12.93	11.95	32.50	131.13
PCB97	2.94	3.91	9.10	25.85
PCB99	7.04	8.51	22.85	90.62
PCB100	1.21 J	0.86 J	2.07	10.63
PCB101/90	5.58	7.57	16.96	113.68
PCB105	3.12	3.78	8.44	18.94
PCB107	1.03 J	1.31 J	3.12	11.04
PCB110	19.35	19.81	54.51	227.79
PCB114	0.28 J	0.34 J	0.68 J	1.36 J
PCB118	10.56	11.79	31.87	103.82
PCB119	0.91 J	1.01 J	2.79	15.18
PCB124	0.28 J	0.34 J	0.55 J	1.43 J
PCB128	2.05 J	2.26	5.73	20.58

Client Reporting Sample ID:	T-L-A-1	T-L-A-2	T-L-A-3	T-L-A-4
PCB129	0.30 J	0.64 J	0.96 J	2.23
PCB130	0.87 J	1.59 J	2.25	7.97
PCB131	0.17 J	0.25 J	0.44 J	5.78
PCB132	3.21	3.57	9.43	27.97
PCB134	0.95 J	0.73 J	1.78	7.47
PCB135/144	2.41	2.31	6.16	28.48
PCB136	2.14	1.65 J	4.47	19.42
PCB137	0.57 J	0.64 J	1.27 J	4.30
PCB138/160/163	12.69	13.86	37.12	142.64
PCB141	0.89 J	1.06 J	2.41	7.40
PCB146	2.08 J	2.40	6.55	31.73
PCB149	9.95	8.90	24.68	115.39
PCB151	2.27	2.41	6.25	29.83
PCB153	9.26	9.85	26.96	118.34
PCB156	0.93 J	1.04 J	3.03	7.90
PCB158	0.82 J	0.83 J	2.02	6.13
PCB167	0.51 J	0.63 J	1.25 J	4.00
PCB169	ND U	ND U	ND U	ND U
PCB170/190	1.50 J	2.16	4.22	17.05
PCB171	0.47 J	0.50 J	1.11 J	5.13
PCB172	0.16 J	0.12 J	0.25 J	0.92 J
PCB173	ND U	0.17 J	ND U	ND U
PCB174	1.40 J	1.16 J	3.22	12.54
PCB175	0.17 J	0.09 J	ND U	0.61 J
PCB176	0.20 J	0.21 J	0.47 J	2.08
PCB177	1.13 J	1.22 J	2.95	14.16
PCB178	0.64 J	0.50 J	1.24 J	5.35
PCB180	2.02 J	2.34	5.72	21.69
PCB183	0.60 J	0.57 J	1.54 J	6.09
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	0.12 J	0.56 J
PCB187/182	2.05 J	1.84 J	4.85	24.76
PCB189	ND U	ND U	0.39 J	0.81 J
PCB191	ND U	ND U	0.16 J	0.46 J
PCB193	0.21 J	0.20 J	0.41 J	1.91
PCB194	0.48 J	0.49 J	0.97 J	4.29
PCB195	0.31 J	ND U	0.52 J	1.54
PCB197	ND U	ND U	ND U	0.21 J
PCB198	ND U	ND U	ND U	ND U
PCB199	0.56 J	0.64 J	1.45 J	5.16
PCB200	ND U	ND U	0.31 J	0.66 J
PCB201	0.31 J	0.21 J	0.30 J	0.85 J
PCB203/196	0.44 J	0.50 J	1.12 J	4.10
PCB205	ND U	ND U	ND U	ND U
PCB206	0.27 J	0.33 J	0.62 J	2.57
PCB207	ND U	ND U	0.18 J	0.35 J
PCB209	ND U	ND U	0.32 J	0.65 J
	549.63	394.81	1074.01	

Surrogate Recovery (%)				
PCB104	73	64	67	77
PCB14	70	60	64	64
PCB34	67	57	63	73
PCB112	77	67	72	84

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-L-A-1	T-L-A-2	T-L-A-3	T-L-A-4
Cl 1	33.43	6.19	19.45	85.44
Cl 2	134.43	37.86	106.93	435.63
Cl 3	99.80	64.95	190.64	890.51
Cl 4	124.02	120.70	332.68	1243.87
Cl 5	89.25	97.26	249.12	926.20
Cl 6	52.08	54.62	142.75	587.56
Cl 7	10.54	11.06	26.64	114.12
Cl 8	2.10	1.83	4.67	16.81
Cl 9	0.27	0.33	0.80	2.92
Cl 10	0.00	0.00	0.32	0.65
	545.92	394.81	1074.01	4303.71
SUM PCB	549.63	397.15	1076.23	4305.10

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Core/Site: TLA

Client Reporting Sample ID:	T-L-A-5	T-L-A-6	T-L-A-7	T-L-A-8
Battelle Sample ID:	W2633	W2634	W2635	W2636
Extraction Batch ID:	01-206	01-206	01-206	01-206
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	59.38	58.26	56.67	48.86
Sample Dry Weight (g):	7.32	6.56	6.59	8.28
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	2.65	2.41 J	19.78	17.81
PCB1	42.61	168.79	1497.80 D	1099.13 D
PCB3	11.42	31.55	313.37	161.81
PCB4/10	150.24	553.66	5626.97 D	4635.93 D
PCB6	6.82	13.42	87.71	56.63
PCB7/9	1.92	3.33	13.11	11.02
PCB8/5	76.26	155.16	563.50 Y	362.76
PCB12/13	0.59 J	0.71 J	2.85	3.53
PCB16/32	112.77	147.94	215.07	74.49
PCB17	51.54	88.08	226.56	130.94
PCB18	21.28	36.33	65.56	41.93
PCB19	84.25	169.96	2245.79 D	1482.54 D
PCB21	ND U	ND U	ND U	ND U
PCB22	1.55	1.36 J	1.38	1.12
PCB24/27	45.37	71.53	454.12	261.53
PCB25	4.66	7.79	9.38	4.10
PCB26	11.68	18.39	49.84	27.63
PCB28	19.47	16.46	16.71	15.50
PCB29	0.31 J	0.35 J	3.23	1.89
PCB31	18.56	28.70	52.93	36.72
PCB33/20	3.95	3.51	8.56	6.12
PCB40	1.40	1.75	2.91	1.33
PCB41/64/71	21.07	25.56	37.70	18.33
PCB42	6.45	5.76	5.08	1.83
PCB43	ND U	ND U	ND U	ND U
PCB44	10.54	11.79	7.46	3.76
PCB45	3.91	4.58	14.16	10.48
PCB46	0.99 J	1.52	2.01	1.34
PCB47/75	57.18	83.69	273.97	133.12
PCB48	ND U	ND U	ND U	ND U
PCB49	67.48	107.60	159.31	75.48
PCB51	40.26	68.32	415.95	169.24
PCB52	58.53	100.58	219.26	105.44
PCB53	59.92	102.08	444.80	190.74
PCB56/60	4.26	4.14	2.43	1.35
PCB59	2.19	2.68	5.44	4.69
PCB63	1.85	1.51	0.59 J	0.31 J
PCB66	14.92	18.33	14.19	6.66
PCB70/76	11.51	14.98	13.04	9.37
PCB74	13.27	10.43	13.83	10.57
PCB82	0.95 J	0.79 J	ND U	ND U
PCB83	1.92	1.68	1.33 J	0.55 J
PCB84	7.06	9.00	14.75	9.65
PCB85	2.65	3.06	6.72	5.31
PCB87/115	2.46	2.35	1.69	1.14 J
PCB89	10.58	10.65	20.07	14.01
PCB91	17.58	18.69	97.93	62.38
PCB92	8.25	9.28	7.01	3.30
PCB95	38.72	60.55	201.19	105.51
PCB97	3.76	3.03	3.14	1.58
PCB99	19.57	14.98	21.25	21.95
PCB100	3.79	5.92	45.05	22.21
PCB101/90	12.42	9.96	26.89	18.27
PCB105	2.81	3.08	2.08	1.38
PCB107	2.47	3.08	3.28	2.13
PCB110	54.24	65.96	172.44	121.61
PCB114	0.25 J	ND U	0.43 J	0.27 J
PCB118	19.95	20.83	33.02	26.97
PCB119	4.31	4.82	8.27	6.29
PCB124	0.21 J	0.21 J	0.20 J	0.13 J
PCB128	3.18	3.65	2.51	3.05

Client Reporting Sample ID:	T-L-A-5	T-L-A-6	T-L-A-7	T-L-A-8
PCB129	0.30 J	0.48 J	0.31 J	0.22 J
PCB130	1.71	1.76	1.42	2.34
PCB131	0.20 J	0.22 J	ND U	ND U
PCB132	6.69	6.64	5.60	7.00
PCB134	1.73	1.83	2.47	2.57
PCB135/144	7.70	8.36	16.84	12.59
PCB136	5.55	6.93	35.96	22.50
PCB137	0.78 J	1.19 J	0.54 J	0.70 J
PCB138/160/163	28.54	33.33	52.59	45.32
PCB141	1.10 J	1.20 J	0.85 J	0.71 J
PCB146	7.53	7.84	17.27	15.20
PCB149	27.94	26.55	66.44	74.88
PCB151	7.90	9.30	9.46	10.12
PCB153	28.76	28.66	56.21	56.25
PCB156	1.98	1.90	1.35 J	1.88
PCB158	1.21 J	1.29 J	1.11 J	1.03 J
PCB167	0.83 J	0.77 J	0.64 J	0.70 J
PCB169	ND U	ND U	ND U	ND U
PCB170/190	3.99	5.08	4.92	9.38
PCB171	1.29	1.29 J	1.22 J	2.50
PCB172	0.23 J	0.34 J	0.38 J	0.55 J
PCB173	ND U	ND U	ND U	ND U
PCB174	3.01	3.32	2.85	4.29
PCB175	0.14 J	0.16 J	0.24 J	0.39 J
PCB176	0.75 J	0.90 J	0.96 J	1.34
PCB177	3.78	4.51	7.96	9.36
PCB178	1.64	2.68	10.31	5.71
PCB180	5.67	6.13	5.78	11.18
PCB183	1.51	1.61	1.49 J	2.76
PCB184	ND U	ND U	ND U	ND U
PCB185	0.18 J	0.20 J	ND U	0.27 J
PCB187/182	6.56	8.12	23.80	20.08
PCB189	0.44 J	0.23 J	0.53 J	0.56 J
PCB191	0.31 J	0.17 J	0.29 J	0.54 J
PCB193	0.77 J	0.56 J	2.15	1.52
PCB194	1.23 J	1.73	3.35	4.23
PCB195	0.76 J	0.66 J	1.28	1.48
PCB197	0.17 J	0.21 J	0.52 J	0.39 J
PCB198	ND U	ND U	0.51 J	0.38 J
PCB199	1.66	2.29	7.01	4.70
PCB200	0.32 J	0.36 J	0.43 J	0.59 J
PCB201	0.35 J	0.50 J	1.28 J	0.94 J
PCB203/196	1.45	1.50 J	2.90	3.95
PCB205	ND U	ND U	0.21 J	0.29 J
PCB206	0.99 J	1.14	4.91	4.59
PCB207	0.23 J	0.14 J	0.77 J	0.68 J
PCB209	0.28 J	0.43 J	2.06	1.47
	1426.27	2516.42	14113.02	9935.15
				6997.72

Surrogate Recovery (%)

	T-L-A-5	T-L-A-6	T-L-A-7	T-L-A-8
PCB104	68	69	71	63
PCB14	63	62	58	61
PCB34	64	65	89	71
PCB112	71	71	69	60

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-L-A-5	T-L-A-6	T-L-A-7	T-L-A-8
Cl 1	54.03	200.34	1811.17	1260.94
Cl 2	235.84	726.28	6294.15	5069.87
Cl 3	375.39	590.40	3349.12	2084.51
Cl 4	375.74	565.31	1632.12	744.05
Cl 5	213.94	247.92	666.74	424.62
Cl 6	133.63	141.90	271.57	257.05
Cl 7	30.26	35.31	62.90	70.42
Cl 8	5.94	7.25	17.50	16.95
Cl 9	1.22	1.28	5.68	5.27
Cl 10	0.28	0.43	2.06	1.47
	1426.27	2516.42	14113.02	9935.15
SUM PCB	1428.92	2518.84	14132.79	9952.96

Battelle
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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Core/Site: TLA

Client Reporting Sample ID:	T-L-A-9	T-L-A-10	T-L-A-11	T-L-A-12
Battelle Sample ID:	W2637	W2638	W2639	W2640
Extraction Batch ID:	01-206	01-206	01-206	01-206
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	31.80	22.46	22.42	20.98
Sample Dry Weight (g):	10.34	13.29	12.31	13.71
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	2.97	1.87	2.00	1.67
PCB1	149.74	29.60	0.43 J	0.95
PCB3	11.64	3.68	0.07 J	0.11 J
PCB4/10	719.56 D	163.17	1.91	4.19
PCB6	17.46	2.46	0.06 J	0.14 J
PCB7/9	5.47	0.75	ND U	ND U
PCB8/5	119.32	15.26	0.27 J	0.60 J
PCB12/13	1.22	0.18 J	ND U	ND U
PCB16/32	58.40	6.61	0.19 J	0.31 J
PCB17	68.80	9.04	0.23 J	0.39 J
PCB18	30.47	4.16	0.13 J	0.22 J
PCB19	111.48	45.38	0.58 J	1.22
PCB21	ND U	ND U	ND U	ND U
PCB22	2.13	0.38 J	ND U	ND U
PCB24/27	27.86	7.76	0.15 J	0.25 J
PCB25	5.37	0.73	ND U	ND U
PCB26	7.75	1.42	ND U	ND U
PCB28	18.58	2.27	0.24 J	0.17 J
PCB29	0.23 J	0.12 J	ND U	ND U
PCB31	19.01	2.68	0.19 J	0.15 J
PCB33/20	2.41	0.70 J	ND U	ND U
PCB40	0.91	0.33 J	0.32 J	0.28 J
PCB41/64/71	9.46	1.83	0.36 J	ND U
PCB42	3.84	0.60 J	ND U	ND U
PCB43	ND U	ND U	ND U	ND U
PCB44	5.10	1.02	0.31 J	ND U
PCB45	3.25	0.68	ND U	ND U
PCB46	0.94	0.23 J	ND U	ND U
PCB47/75	20.00	5.21	0.18 J	0.29 J
PCB48	2.58	0.57 J	ND U	ND U
PCB49	20.44	4.89	0.47 J	0.37 J
PCB51	11.11	5.43	0.13 J	0.15 J
PCB52	23.30	5.54	0.33 J	0.34 J
PCB53	28.85	7.84	0.17 J	0.29 J
PCB56/60	2.20	0.97	0.33 J	ND U
PCB59	1.34	0.33 J	ND U	ND U
PCB63	0.32 J	0.13 J	ND U	ND U
PCB66	4.93	1.97	0.63 J	ND U
PCB70/76	5.35	1.71	0.52 J	0.12 J
PCB74	8.74	1.78	0.36 J	0.10 J
PCB82	0.38 J	0.17 J	ND U	ND U
PCB83	0.52 J	0.25 J	ND U	ND U
PCB84	3.79	0.83	ND U	ND U
PCB85	0.81 J	0.34 J	0.14 J	ND U
PCB87/115	0.91 J	0.37 J	ND U	ND U
PCB89	4.18	0.92	ND U	ND U
PCB91	5.45	2.19	ND U	ND U
PCB92	1.31	0.38 J	ND U	ND U
PCB95	13.22	4.39	0.23 J	0.23 J
PCB97	1.79	0.44 J	ND U	ND U
PCB99	7.86	1.68	ND U	ND U
PCB100	0.80 J	0.72	ND U	ND U
PCB101/90	4.31	1.28	ND U	ND U
PCB105	1.10	0.45 J	0.17 J	ND U
PCB107	0.46 J	0.17 J	ND U	ND U
PCB110	18.41	5.24	0.41 J	0.28 J
PCB114	0.13 J	ND U	ND U	ND U
PCB118	6.17	1.78	0.35 J	ND U
PCB119	0.57 J	0.29 J	ND U	ND U
PCB124	0.08 J	ND U	ND U	ND U
PCB128	1.14	0.41 J	ND U	ND U

Client Reporting Sample ID:	T-L-A-9	T-L-A-10	T-L-A-11	T-L-A-12
PCB129	0.17 J	ND U	ND U	ND U
PCB130	0.58 J	ND U	ND U	ND U
PCB131	0.11 J	ND U	ND U	ND U
PCB132	2.83	0.65 J	0.20 J	ND U
PCB134	0.62 J	0.26 J	ND U	ND U
PCB135/144	1.44	0.68 J	ND U	ND U
PCB136	2.11	0.98	ND U	ND U
PCB137	0.33 J	ND U	ND U	ND U
PCB138/160/163	7.08	2.38	0.35 J	ND U
PCB141	0.63 J	0.14 J	ND U	ND U
PCB146	1.10	0.68 J	ND U	ND U
PCB149	9.24	2.98	0.21 J	ND U
PCB151	1.53	0.52 J	ND U	ND U
PCB153	6.06	2.10	0.27 J	ND U
PCB156	0.73 J	0.12 J	ND U	ND U
PCB158	0.55 J	0.19 J	ND U	ND U
PCB167	0.22 J	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	1.36	0.39 J	ND U	ND U
PCB171	0.38 J	0.13 J	ND U	ND U
PCB172	0.07 J	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	0.83 J	0.24 J	ND U	ND U
PCB175	0.10 J	ND U	ND U	ND U
PCB176	0.17 J	0.09 J	ND U	ND U
PCB177	0.75 J	0.32 J	ND U	ND U
PCB178	0.29 J	0.31 J	ND U	ND U
PCB180	1.51	0.58 J	ND U	ND U
PCB183	0.65 J	0.18 J	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	0.12 J	ND U	ND U	ND U
PCB187/182	1.42	0.72 J	ND U	ND U
PCB189	ND U	ND U	ND U	ND U
PCB191	0.03 J	ND U	ND U	ND U
PCB193	0.10 J	0.07 J	ND U	ND U
PCB194	0.35 J	0.28 J	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	0.52 J	0.30 J	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	0.14 J	ND U	ND U	ND U
PCB203/196	0.47 J	0.31 J	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	0.36 J	0.21 J	ND U	ND U
PCB207	0.07 J	ND U	ND U	ND U
PCB209	0.14 J	ND U	ND U	ND U
	1648.05	375.54	10.87	11.15

Surrogate Recovery (%)				
PCB104	49	62	58	66
PCB14	52	62	57	64
PCB34	48	54	48	54
PCB112	47	53	46	54

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-L-A-9	T-L-A-10	T-L-A-11	T-L-A-12
Cl 1	161.38	33.28	0.49	1.06
Cl 2	863.03	181.83	2.24	4.93
Cl 3	352.47	81.25	1.71	2.72
Cl 4	152.64	41.06	4.09	1.92
Cl 5	72.25	21.90	1.30	0.52
Cl 6	36.46	12.10	1.03	0.00
Cl 7	7.78	3.02	0.00	0.00
Cl 8	1.48	0.89	0.00	0.00
Cl 9	0.43	0.21	0.00	0.00
Cl 10	0.14	0.00	0.00	0.00
	1648.05	375.54	10.87	11.15
SUM PCB	1651.02	377.41	12.87	12.82

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Core/Site: TLA

Client Reporting Sample ID:	T-L-A-13	T-L-A-14	T-L-A-15	T-L-A-16
Battelle Sample ID:	W2641	W2642	W2643	W2644
Extraction Batch ID:	01-206	01-206	01-206	01-206
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	23.38	30.15	30.37	31.68
Sample Dry Weight (g):	13.87	11.52	10.31	9.68
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	1.50	2.24	1.74	0.75 J
PCB1	0.33 J	0.22 J	0.17 J	ND U
PCB3	0.05 J	ND U	ND U	ND U
PCB4/10	1.46	0.74 J	0.49 J	0.25 J
PCB6	0.05 J	ND U	ND U	ND U
PCB7/9	ND U	ND U	ND U	ND U
PCB8/5	0.19 J	ND U	ND U	0.15 J
PCB12/13	ND U	ND U	ND U	ND U
PCB16/32	ND U	ND U	ND U	0.11 J
PCB17	0.20 J	ND U	ND U	ND U
PCB18	0.14 J	ND U	ND U	ND U
PCB19	0.52 J	0.31 J	0.22 J	0.21 J
PCB21	ND U	ND U	ND U	ND U
PCB22	ND U	ND U	ND U	ND U
PCB24/27	0.14 J	ND U	ND U	0.05 J
PCB25	ND U	ND U	ND U	ND U
PCB26	ND U	ND U	ND U	ND U
PCB28	0.07 J	ND U	ND U	ND U
PCB29	ND U	ND U	ND U	ND U
PCB31	0.09 J	ND U	ND U	ND U
PCB33/20	ND U	ND U	ND U	ND U
PCB40	0.16 J	ND U	ND U	ND U
PCB41/64/71	ND U	ND U	ND U	ND U
PCB42	ND U	ND U	ND U	ND U
PCB43	ND U	ND U	ND U	ND U
PCB44	ND U	ND U	ND U	ND U
PCB45	ND U	ND U	ND U	ND U
PCB46	ND U	ND U	ND U	ND U
PCB47/75	0.11 J	ND U	ND U	0.05 J
PCB48	ND U	ND U	ND U	ND U
PCB49	0.14 J	ND U	ND U	0.09 J
PCB51	ND U	ND U	ND U	ND U
PCB52	0.26 J	ND U	ND U	0.13 J
PCB53	0.09 J	ND U	ND U	ND U
PCB56/60	ND U	ND U	ND U	ND U
PCB59	ND U	ND U	ND U	ND U
PCB63	ND U	ND U	ND U	ND U
PCB66	ND U	ND U	ND U	ND U
PCB70/76	ND U	ND U	ND U	ND U
PCB74	ND U	ND U	ND U	ND U
PCB82	ND U	ND U	ND U	ND U
PCB83	ND U	ND U	ND U	ND U
PCB84	ND U	ND U	ND U	ND U
PCB85	ND U	ND U	ND U	ND U
PCB87/115	ND U	ND U	ND U	ND U
PCB89	ND U	ND U	ND U	ND U
PCB91	ND U	ND U	ND U	ND U
PCB92	ND U	ND U	ND U	ND U
PCB95	ND U	ND U	ND U	ND U
PCB97	ND U	ND U	ND U	ND U
PCB99	ND U	ND U	ND U	ND U
PCB100	ND U	ND U	ND U	ND U
PCB101/90	ND U	ND U	ND U	ND U
PCB105	ND U	ND U	ND U	ND U
PCB107	ND U	ND U	ND U	ND U
PCB110	ND U	ND U	ND U	ND U
PCB114	ND U	ND U	ND U	ND U
PCB118	ND U	ND U	ND U	ND U
PCB119	ND U	ND U	ND U	ND U
PCB124	ND U	ND U	ND U	ND U
PCB128	ND U	ND U	ND U	ND U

Client Reporting Sample ID:	T-L-A-13	T-L-A-14	T-L-A-15	T-L-A-16
PCB129	ND U	ND U	ND U	ND U
PCB130	ND U	ND U	ND U	ND U
PCB131	ND U	ND U	ND U	ND U
PCB132	ND U	ND U	ND U	ND U
PCB134	ND U	ND U	ND U	ND U
PCB135/144	ND U	ND U	ND U	ND U
PCB136	ND U	ND U	ND U	0.07 J
PCB137	ND U	ND U	ND U	ND U
PCB138/160/163	ND U	ND U	ND U	ND U
PCB141	ND U	ND U	ND U	ND U
PCB146	ND U	ND U	ND U	ND U
PCB149	ND U	ND U	ND U	ND U
PCB151	ND U	ND U	ND U	ND U
PCB153	ND U	ND U	ND U	ND U
PCB156	ND U	ND U	ND U	ND U
PCB158	ND U	ND U	ND U	ND U
PCB167	ND U	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	ND U	ND U
PCB171	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	ND U	ND U
PCB175	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	ND U	ND U
PCB177	ND U	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U
PCB180	ND U	ND U	ND U	ND U
PCB183	ND U	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U
PCB187/182	ND U	ND U	ND U	ND U
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U
	4.00	1.27	0.88	

Surrogate Recovery (%)				
PCB104	72	58	57	51
PCB14	66	54	54	48
PCB34	57	49	46	53
PCB112	57	47	45	111

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-L-A-13	T-L-A-14	T-L-A-15	T-L-A-16
Cl 1	0.38	0.22	0.17	0.00
Cl 2	1.70	0.74	0.49	0.40
Cl 3	1.16	0.31	0.22	0.38
Cl 4	0.76	0.00	0.00	0.27
Cl 5	0.00	0.00	0.00	0.00
Cl 6	0.00	0.00	0.00	0.07
Cl 7	0.00	0.00	0.00	0.00
Cl 8	0.00	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00
	4.00	1.27	0.88	1.12
SUM PCB	5.50	3.51	2.62	1.86

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Core/Site: TLA

Client Reporting Sample ID:	T-L-A-17	T-L-A-18	T-L-A-19	T-L-A-20
Battelle Sample ID:	W2645	W2646	W2647	W2648
Extraction Batch ID:	01-206	01-206	01-206	01-206
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	31.12	28.93	25.71	20.11
Sample Dry Weight (g):	9.33	9.73	12.05	12.73
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	2.24	0.57 J	1.79	1.38
PCB1	0.11 J	0.03 J	0.06 J	0.03 J
PCB3	0.03 J	ND U	ND U	ND U
PCB4/10	0.56 J	0.11 J	0.19 J	0.11 J
PCB6	0.04 J	ND U	ND U	ND U
PCB7/9	ND U	ND U	ND U	ND U
PCB8/5	0.08 J	ND U	ND U	ND U
PCB12/13	ND U	ND U	ND U	ND U
PCB16/32	0.08 J	ND U	ND U	ND U
PCB17	0.06 J	ND U	ND U	ND U
PCB18	0.07 J	ND U	ND U	ND U
PCB19	0.23 J	0.07 J	0.12 J	ND U
PCB21	ND U	ND U	ND U	ND U
PCB22	ND U	ND U	ND U	ND U
PCB24/27	0.09 J	ND U	ND U	ND U
PCB25	ND U	ND U	ND U	ND U
PCB26	ND U	ND U	ND U	ND U
PCB28	ND U	ND U	ND U	ND U
PCB29	ND U	ND U	ND U	ND U
PCB31	ND U	ND U	ND U	ND U
PCB33/20	ND U	ND U	ND U	ND U
PCB40	ND U	ND U	ND U	ND U
PCB41/64/71	ND U	ND U	ND U	ND U
PCB42	ND U	ND U	ND U	ND U
PCB43	ND U	ND U	ND U	ND U
PCB44	ND U	ND U	ND U	ND U
PCB45	ND U	ND U	ND U	ND U
PCB46	ND U	ND U	ND U	ND U
PCB47/75	0.06 J	ND U	ND U	ND U
PCB48	ND U	ND U	ND U	ND U
PCB49	0.05 J	ND U	ND U	ND U
PCB51	ND U	ND U	ND U	ND U
PCB52	0.18 J	ND U	ND U	0.10 J
PCB53	0.05 J	ND U	ND U	ND U
PCB56/60	ND U	ND U	ND U	ND U
PCB59	ND U	ND U	ND U	ND U
PCB63	ND U	ND U	ND U	ND U
PCB66	ND U	ND U	ND U	ND U
PCB70/76	ND U	ND U	ND U	ND U
PCB74	ND U	ND U	ND U	ND U
PCB82	ND U	ND U	ND U	ND U
PCB83	ND U	ND U	ND U	ND U
PCB84	ND U	ND U	ND U	ND U
PCB85	ND U	ND U	ND U	ND U
PCB87/115	ND U	ND U	ND U	ND U
PCB89	ND U	ND U	ND U	ND U
PCB91	ND U	ND U	ND U	ND U
PCB92	ND U	ND U	ND U	ND U
PCB95	ND U	ND U	ND U	ND U
PCB97	ND U	ND U	ND U	ND U
PCB99	ND U	ND U	ND U	ND U
PCB100	ND U	ND U	ND U	ND U
PCB101/90	ND U	ND U	ND U	ND U
PCB105	ND U	ND U	ND U	ND U
PCB107	ND U	ND U	ND U	ND U
PCB110	ND U	ND U	ND U	ND U
PCB114	ND U	ND U	ND U	ND U
PCB118	ND U	ND U	ND U	ND U
PCB119	ND U	ND U	ND U	ND U
PCB124	ND U	ND U	ND U	ND U
PCB128	ND U	ND U	ND U	ND U

Client Reporting Sample ID:	T-L-A-17	T-L-A-18	T-L-A-19	T-L-A-20
PCB129	ND U	ND U	ND U	ND U
PCB130	ND U	ND U	ND U	ND U
PCB131	ND U	ND U	ND U	ND U
PCB132	ND U	ND U	ND U	ND U
PCB134	ND U	ND U	ND U	ND U
PCB135/144	ND U	ND U	ND U	ND U
PCB136	ND U	ND U	ND U	ND U
PCB137	ND U	ND U	ND U	ND U
PCB138/160/163	ND U	ND U	ND U	ND U
PCB141	ND U	ND U	ND U	ND U
PCB146	ND U	ND U	ND U	ND U
PCB149	ND U	ND U	ND U	ND U
PCB151	ND U	ND U	ND U	ND U
PCB153	ND U	ND U	ND U	ND U
PCB156	ND U	ND U	ND U	ND U
PCB158	ND U	ND U	ND U	ND U
PCB167	ND U	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	ND U	ND U
PCB171	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	ND U	ND U
PCB175	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	ND U	ND U
PCB177	ND U	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U
PCB180	ND U	ND U	ND U	ND U
PCB183	ND U	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U
PCB187/182	ND U	ND U	ND U	ND U
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U

Surrogate Recovery (%)				
PCB104	59	66	68	56
PCB14	59	61	58	58
PCB34	52	53	51	51
PCB112	51	57	56	55

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-L-A-17	T-L-A-18	T-L-A-19	T-L-A-20
Cl 1	0.14	0.03	0.06	0.03
Cl 2	0.68	0.11	0.19	0.11
Cl 3	0.53	0.07	0.12	0.00
Cl 4	0.34	0.00	0.00	0.10
Cl 5	0.00	0.00	0.00	0.00
Cl 6	0.00	0.00	0.00	0.00
Cl 7	0.00	0.00	0.00	0.00
Cl 8	0.00	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00
	1.69	0.21	0.37	0.24
SUM PCB	3.94	0.79	2.17	1.62

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Client Reporting Sample ID:	T-L-B-1	T-L-B-2	T-L-B-3	T-L-B-4
Battelle Sample ID:	W2718	W2719	W2720	W2721
Extraction Batch ID:	01-207	01-207	01-207	01-207
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	72.38	65.50	62.82	61.41
Sample Dry Weight (g):	3.05	5.19	4.97	5.99
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.65 J	0.70 J	0.61 J	0.71 J
PCB1	7.95	14.56	15.16	24.94
PCB3	3.31	4.61	5.10	10.67
PCB4/10	59.52	94.27	81.32	158.72
PCB6	2.12 J	3.14	3.39	7.29
PCB7/9	0.56 J	0.96 J	1.04 J	2.05
PCB8/5	17.67	29.40	33.23	81.84
PCB12/13	0.68 J	0.86 J	0.46 J	0.93 J
PCB16/32	40.44	71.94	69.27	155.19
PCB17	17.82	30.15	29.60	63.71
PCB18	10.58	16.21	14.00	24.56
PCB19	42.03	65.13	56.59	106.23
PCB21	ND U	ND U	ND U	ND U
PCB22	3.43	5.44	4.07	4.90
PCB24/27	17.64	28.96	27.41	57.54
PCB25	2.71 J	4.15	3.84	6.80
PCB26	6.83	10.53	9.85	18.25
PCB28	19.16	31.45	29.09	39.94
PCB29	ND U	0.33 J	ND U	0.38 J
PCB31	14.06	22.00	18.56	33.43
PCB33/20	5.84	9.33	10.00	13.96
PCB40	3.83	5.87	4.61	2.54
PCB41/64/71	29.22	50.66	40.28	54.03
PCB42	12.34	20.04	16.82	21.64
PCB43	ND U	ND U	ND U	ND U
PCB44	27.00	45.14	36.31	42.91
PCB45	5.57	8.48	6.77	9.67
PCB46	1.83 J	3.12	2.54	3.16
PCB47/75	34.22	57.43	55.46	98.45
PCB48	5.32	7.60	10.08	10.51
PCB49	44.64	74.98	67.95	114.74
PCB51	17.20	28.27	27.09	55.56
PCB52	48.64	78.98	69.07	109.28
PCB53	25.57	41.37	39.64	80.44
PCB56/60	21.21	32.90	23.86	25.54
PCB59	3.13	4.81	4.36	5.56
PCB63	2.16 J	3.60	3.46	5.31
PCB66	40.68	68.72	56.81	67.11
PCB70/76	25.66	43.92	38.31	46.76
PCB74	24.17	41.94	35.32	46.62
PCB82	4.71	7.89	6.19	6.57
PCB83	2.71 J	4.37	3.96	5.42
PCB84	9.85	15.84	14.31	19.45
PCB85	7.74	12.38	9.98	11.75
PCB87/115	13.96	22.15	16.95	19.24
PCB89	ND U	ND U	ND U	ND U
PCB91	11.12	17.69	17.77	32.06
PCB92	9.19	15.62	14.97	23.88
PCB95	39.23	63.52	56.94	87.35
PCB97	11.73	18.90	15.70	18.02
PCB99	23.27	39.72	37.12	55.21
PCB100	2.10 J	3.11	2.95	5.55
PCB101/90	47.14	77.54	69.06	91.90
PCB105	13.46	22.00	16.24	17.36
PCB107	3.11	5.53	5.14	7.49
PCB110	59.25	105.46	95.93	148.00
PCB114	0.86 J	1.05 J	0.95 J	1.14 J
PCB118	37.42	66.50	56.27	72.75
PCB119	2.24 J	4.17	4.23	7.97
PCB124	0.88 J	1.43 J	1.04 J	0.98 J
PCB128	7.75	12.59	10.56	13.52

Client Reporting Sample ID:	T-L-B-1	T-L-B-2	T-L-B-3	T-L-B-4
PCB129	1.73 J	2.37	1.59 J	1.80
PCB130	2.36 J	4.44	3.87	5.87
PCB131	0.54 J	0.53 J	1.38 J	0.50 J
PCB132	11.30	20.30	17.80	24.38
PCB134	1.87 J	3.37	3.18	4.52
PCB135/144	6.59	10.41	10.05	16.70
PCB136	4.91	7.56	7.37	11.92
PCB137	2.13 J	2.78	2.26	2.98
PCB138/160/163	46.44	82.19	72.17	98.36
PCB141	3.62	6.45	4.89	5.39
PCB146	6.48	10.63	10.70	18.08
PCB149	25.31	42.79	41.46	67.92
PCB151	6.61	11.23	10.52	17.87
PCB153	29.38	51.86	49.00	75.60
PCB156	3.36	6.71	5.48	6.58
PCB158	3.21 J	4.92	4.04	4.65
PCB167	1.68 J	2.45	2.13	2.67
PCB169	ND U	ND U	ND U	ND U
PCB170/190	4.93	9.27	8.53	11.27
PCB171	1.27 J	2.37	2.17	3.16
PCB172	0.34 J	0.47 J	0.42 J	0.62 J
PCB173	ND U	ND U	0.20 J	0.23 J
PCB174	3.51	7.20	6.95	9.60
PCB175	0.18 J	0.34 J	0.58 J	0.38 J
PCB176	0.99 J	0.89 J	0.98 J	1.54
PCB177	3.45	5.41	5.50	8.54
PCB178	1.52 J	1.99	1.87	3.36
PCB180	6.06	10.53	10.20	14.31
PCB183	1.89 J	3.08	3.18	4.31
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	0.48 J	0.30 J	0.50 J
PCB187/182	5.38	8.24	8.30	14.39
PCB189	0.31 J	0.71 J	0.66 J	0.66 J
PCB191	ND U	0.20 J	0.24 J	0.42 J
PCB193	0.44 J	0.60 J	0.84 J	1.19 J
PCB194	1.06 J	1.65 J	1.51 J	2.54
PCB195	ND U	0.75 J	0.87 J	1.06 J
PCB197	ND U	ND U	ND U	0.36 J
PCB198	ND U	ND U	ND U	ND U
PCB199	1.67 J	1.91	2.12	3.25
PCB200	ND U	0.27 J	0.42 J	0.75 J
PCB201	ND U	0.43 J	0.29 J	0.70 J
PCB203/196	1.22 J	1.58 J	1.71 J	2.55
PCB205	ND U	ND U	ND U	ND U
PCB206	0.60 J	0.88 J	1.00 J	1.41
PCB207	ND U	0.14 J	0.12 J	0.28 J
PCB209	0.24 J	0.30 J	0.43 J	0.56 J

Surrogate Recovery (%)				
PCB104	62	84	72	77
PCB14	50	66	56	61
PCB34	48	68	58	66
PCB112	51	80	68	77

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-L-B-1	T-L-B-2	T-L-B-3	T-L-B-4
Cl 1	11.26	19.16	20.26	35.61
Cl 2	80.55	128.64	119.44	250.83
Cl 3	180.54	295.61	272.28	524.89
Cl 4	372.38	617.82	538.72	799.82
Cl 5	299.97	504.86	445.72	632.09
Cl 6	165.27	283.57	258.44	379.32
Cl 7	30.27	51.77	50.93	74.48
Cl 8	3.96	6.59	6.91	11.22
Cl 9	0.60	1.02	1.12	1.68
Cl 10	0.24	0.30	0.43	0.56
SUM PCB	1145.677779	1910.042504	1714.855049	2711.214215

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Client Reporting Sample ID:	T-L-B-5	T-L-B-6	T-L-B-7	T-L-B-8
Battelle Sample ID:	W2722-1	W2723	W2724	W2725
Extraction Batch ID:	01-480	01-207	01-207	01-207
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	60.99	55.93	53.46	56.16
Sample Dry Weight (g):	5.93	6.56	7.15	7.50
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	1.02 J	0.89 J	1.04 J	1.27 J
PCB1	88.75	104.44	123.60	152.82
PCB3	46.20	66.85	108.96	139.15
PCB4/10	627.05 D	561.29 D	679.59 D	1103.96 D
PCB6	27.31	35.24	46.94	62.61
PCB7/9	7.07	10.61	17.16	22.10
PCB8/5	332.97 Y	480.05 Y	570.37 D	775.84 D
PCB12/13	3.05	2.34	3.31	4.42
PCB16/32	630.47 D	689.45 D	859.45 D	1336.35 D
PCB17	225.57	379.68 Y	387.11 D	620.47 D
PCB18	86.02	179.89	279.65 Y	331.18 Y
PCB19	368.64 Y	569.65 Y	546.47 D	857.97 D
PCB21	ND U	ND U	ND U	ND U
PCB22	10.70	5.73	3.27	4.91
PCB24/27	217.29	325.93	407.99 Y	554.60 D
PCB25	23.23	29.61	43.27	60.62
PCB26	65.15	83.94	110.50	160.81
PCB28	95.19	96.45	72.46	82.59
PCB29	1.37 J	1.39	1.49	2.25
PCB31	111.70	159.55	231.23	297.68 Y
PCB33/20	18.30	10.27	8.29	13.26
PCB40	22.90	5.28	3.85	5.64
PCB41/64/71	119.64	135.90	148.09	165.09
PCB42	40.19	30.12	21.65	15.88
PCB43	ND U	ND U	ND U	ND U
PCB44	84.75	46.66	33.12	53.68
PCB45	24.00	17.97	15.19	21.65
PCB46	6.22	3.94	3.94	7.73
PCB47/75	287.72 Y	409.96 Y	471.55 Y	566.91 D
PCB48	ND U	ND U	ND U	ND U
PCB49	297.18 Y	482.75 Y	462.60 D	647.58 D
PCB51	193.30	299.68	374.51 Y	465.23 D
PCB52	301.48 Y	435.11 Y	471.87 D	741.17 D
PCB53	268.09 Y	477.92 Y	491.12 D	705.40 D
PCB56/60	40.01	19.66	12.68	18.84
PCB59	12.58	10.79	9.83	14.93
PCB63	14.58	9.79	6.51	7.38
PCB66	107.24	81.11	69.99	88.70
PCB70/76	82.55	65.95	69.24	103.63
PCB74	76.96	72.67	49.83	23.62
PCB82	9.99	5.81	3.71	2.70
PCB83	12.59	9.91	7.58	8.22
PCB84	43.59	46.35	47.61	46.95
PCB85	22.20	17.13	14.34	14.70
PCB87/115	28.93	16.18	13.00	12.96
PCB89	ND U	ND U	ND U	ND U
PCB91	91.22	113.89	103.26	76.21
PCB92	60.55	56.86	47.99	55.00
PCB95	207.59	287.72	339.14 Y	397.54 D
PCB97	30.20	16.59	8.13	5.10
PCB99	121.77	99.58	55.20	25.56
PCB100	16.78	24.59	28.93	38.09
PCB101/90	157.02	167.07	108.93	59.71
PCB105	24.09	17.47	13.38	17.02
PCB107	19.39	17.77	15.99	21.55
PCB110	339.69 Y	368.60	334.59 Y	393.24 Y
PCB114	2.08	1.46	1.17 J	1.27
PCB118	136.02	135.30	112.38	93.58
PCB119	24.15	27.15	25.62	31.11
PCB124	1.58	0.91 J	0.42 J	0.56 J
PCB128	25.44	21.29	15.93	13.56

Client Reporting Sample ID:	T-L-B-5	T-L-B-6	T-L-B-7	T-L-B-8
PCB129	3.33	2.20	1.53	1.28
PCB130	12.18	13.84	12.17	10.85
PCB131	9.62	0.70 J	0.42 J	0.35 J
PCB132	44.52	46.72	32.97	23.90
PCB134	12.24	12.17	11.87	10.75
PCB135/144	45.70	51.68	47.33	40.13
PCB136	29.04	36.69	37.20	33.17
PCB137	6.10	4.60	3.25	2.77
PCB138/160/163	212.30	224.42	191.89	211.53
PCB141	9.48	7.07	4.88	3.96
PCB146	51.15	54.69	44.44	38.97
PCB149	169.01	168.72	113.54	75.90
PCB151	49.24	56.92	56.53	58.24
PCB153	172.28	193.50	149.17	115.71
PCB156	11.06	10.71	8.03	7.48
PCB158	8.61	7.35	5.51	4.71
PCB167	5.37	4.95	3.89	3.66
PCB169	ND U	ND U	ND U	ND U
PCB170/190	25.50	28.34	24.57	26.10
PCB171	7.46	7.88	6.78	6.85
PCB172	1.44 J	1.68	1.51	1.60
PCB173	0.38 J	0.38 J	0.19 J	0.16 J
PCB174	17.93	20.71	16.36	15.05
PCB175	0.76 J	0.97 J	0.74 J	0.91 J
PCB176	3.18	3.80	3.33	2.95
PCB177	21.87	26.22	24.23	23.88
PCB178	9.12	12.23	12.57	17.10
PCB180	33.47	38.77	33.94	34.73
PCB183	9.68	10.34	8.74	8.46
PCB184	ND U	ND U	ND U	ND U
PCB185	1.00 J	1.05 J	0.87 J	0.78 J
PCB187/182	38.41	46.85	41.91	42.01
PCB189	1.11 J	1.51	1.52	1.72
PCB191	0.67 J	0.90 J	0.74 J	0.77 J
PCB193	3.06	3.67	3.32	3.70
PCB194	5.45	7.09	7.71	9.84
PCB195	2.29	3.01	3.16	3.73
PCB197	0.39 J	0.58 J	0.54 J	0.68 J
PCB198	ND U	0.81 J	0.74 J	0.83 J
PCB199	7.66	9.99	9.93	12.08
PCB200	1.01 J	1.30 J	1.08 J	1.37
PCB201	1.34 J	1.81	1.86	2.03
PCB203/196	6.37	7.78	7.55	9.45
PCB205	0.35 J	0.32 J	0.41 J	0.64 J
PCB206	3.63	4.30	4.86	6.71
PCB207	0.43 J	0.64 J	0.76 J	1.00
PCB209	0.86 J	1.29	1.28	1.89

Surrogate Recovery (%)				
PCB104	76	80	84	85
PCB14	61	57	61	59
PCB34	76	73	74	78
PCB112	83	81	84	87

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-L-B-5	T-L-B-6	T-L-B-7	T-L-B-8
Cl 1	134.95	171.29	232.56	291.97
Cl 2	997.45	1089.53	1317.39	1968.93
Cl 3	1853.64	2531.53	2951.19	4322.69
Cl 4	1979.39	2605.26	2715.57	3653.06
Cl 5	1349.43	1430.33	1281.38	1301.07
Cl 6	876.68	918.22	740.59	656.91
Cl 7	175.06	205.30	181.34	186.77
Cl 8	24.87	32.69	32.98	40.65
Cl 9	4.06	4.94	5.62	7.70
Cl 10	0.86	1.29	1.28	1.89
SUM PCB	7397.410765	8991.277397	9460.931557	12432.90635

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Client Reporting Sample ID:	T-L-B-9	T-L-B-10	T-L-B-11	T-L-B-12
Battelle Sample ID:	W2726	W2727	W2728	W2729
Extraction Batch ID:	01-207	01-207	01-207	01-207
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	56.71	55.38	56.41	54.22
Sample Dry Weight (g):	7.90	7.46	6.69	6.73
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	3.24	5.71	7.47	5.64
PCB1	588.91 D	1391.75 D	1679.30 D	1252.90 D
PCB3	275.04 D	404.40 D	623.33 D	517.55 D
PCB4/10	4101.52 D	9047.68 D	13239.59 D	102.85 Y
PCB6	140.61 Y	212.10 Y	279.87 Y	194.00 D
PCB7/9	54.79	71.90	99.34	64.30 Y
PCB8/5	1742.68 D	2536.27 D	3017.01 D	24.64 Y
PCB12/13	12.59	19.04	18.79	14.12
PCB16/32	2437.01 D	3387.14 D	3971.85 D	32.71 Y
PCB17	1038.62 D	1223.53 D	1207.74 D	1034.97 D
PCB18	459.95 D	460.34 D	716.62 D	581.46 D
PCB19	1794.97 D	3324.93 D	4272.96 D	3226.55 D
PCB21	ND U	ND U	ND U	ND U
PCB22	3.81	4.63	4.06	4.27
PCB24/27	824.08 D	1205.14 D	1677.95 D	1266.29 D
PCB25	99.94	75.86	63.73	63.62 D
PCB26	281.73 D	341.22 D	430.73 D	376.86 D
PCB28	41.35	22.41	17.40	20.27
PCB29	4.64	5.41	6.86	ND U
PCB31	327.81 D	339.33 D	444.33 D	426.88 D
PCB33/20	ND U	ND U	ND U	ND U
PCB40	3.06	2.76	2.67	2.00
PCB41/64/71	219.46 Y	210.14 D	270.05 D	247.16 D
PCB42	8.57	19.57	25.26	22.94
PCB43	ND U	ND U	ND U	ND U
PCB44	32.16	23.92	23.09	28.44
PCB45	27.74	38.91	45.01	36.15
PCB46	8.57	6.96	6.28	5.73
PCB47/75	598.45 D	679.80 D	698.38 D	562.15 D
PCB48	ND U	ND U	ND U	ND U
PCB49	748.59 D	827.23 D	835.09 D	708.82 D
PCB51	635.51 D	1026.29 D	1250.63 D	964.69 D
PCB52	918.04 D	1067.14 D	1136.93 D	951.57 D
PCB53	1170.16 D	1392.13 D	1653.70 D	1333.65 D
PCB56/60	9.15	5.95	4.90	6.59
PCB59	16.50	16.43	22.44	20.14
PCB63	3.90	4.01	4.83	4.27
PCB66	53.33	33.32	28.86	26.59
PCB70/76	84.31	45.60	32.77	35.89
PCB74	10.27	22.94	31.11	25.22
PCB82	1.56	2.48	3.00	3.28
PCB83	5.76	7.56	9.69	8.17
PCB84	42.93	61.73	80.45	73.94
PCB85	15.78	21.59	25.01	ND U
PCB87/115	8.46	11.23	11.19	10.39
PCB89	ND U	ND U	ND U	ND U
PCB91	81.91	145.78 Y	219.95 Y	131.76 D
PCB92	43.21	51.15	66.47	63.99
PCB95	459.72 D	519.40 D	656.74 D	455.09 D
PCB97	2.55	4.64	6.51	4.79
PCB99	11.77	31.26	55.16	37.61
PCB100	64.84	82.32	102.29	61.87 D
PCB101/90	33.52	88.54	147.70	97.33
PCB105	12.67	10.70	9.52	8.22
PCB107	20.11	18.52	19.02	17.65
PCB110	268.15 D	292.47 D	371.68 D	386.65 D
PCB114	1.41	1.79	2.18	2.23
PCB118	62.21	95.73	111.76	51.79 D
PCB119	33.95	36.22	40.33	38.30
PCB124	0.23 J	0.29 J	0.32 J	0.90 J
PCB128	9.20	14.68	18.04	13.58

Client Reporting Sample ID:	T-L-B-9	T-L-B-10	T-L-B-11	T-L-B-12
PCB129	0.78 J	1.25	1.45	1.32 J
PCB130	10.17	15.08	18.40	13.14
PCB131	0.27 J	0.40 J	0.78 J	ND U
PCB132	14.58	29.58	43.20	25.15
PCB134	9.63	15.92	22.27	18.38
PCB135/144	33.10	63.07	94.56	76.46
PCB136	32.84	58.73	85.11	69.76
PCB137	1.65	2.61	3.46	2.47
PCB138/160/163	252.16 Y	162.35 D	208.96 D	207.11 D
PCB141	2.29	3.53	4.39	3.65
PCB146	29.58	61.40	95.37	75.33
PCB149	41.90	113.61	210.74 Y	93.90 D
PCB151	61.50	86.41	114.73	67.14 D
PCB153	75.68	167.40 Y	258.24 Y	109.49 D
PCB156	5.77	8.75	10.25	7.01
PCB158	3.37	5.82	7.50	5.55
PCB167	2.98	4.62	5.75	4.01
PCB169	ND U	ND U	ND U	ND U
PCB170/190	27.45	39.75	50.40	37.27
PCB171	6.45	10.14	13.82	10.41
PCB172	1.68	2.66	3.48	2.35
PCB173	0.30 J	0.48 J	0.54 J	ND U
PCB174	12.42	19.52	27.60	19.38
PCB175	0.70 J	1.19 J	1.60	1.11 J
PCB176	2.61	4.86	7.11	4.33
PCB177	25.14	42.54	60.28	45.81
PCB178	26.93	34.64	42.63	30.78
PCB180	35.27	52.85	68.23	47.91
PCB183	7.66	12.66	17.13	12.37
PCB184	0.09 J	ND U	0.23 J	ND U
PCB185	0.72 J	1.03 J	1.36	1.35
PCB187/182	40.86	76.39	117.28	86.03
PCB189	2.10	3.08	3.83	2.38
PCB191	0.85 J	1.22	1.61	1.00 J
PCB193	4.19	7.11	10.33	6.23
PCB194	14.78	19.91	24.79	13.00
PCB195	4.84	6.92	8.39	5.52
PCB197	0.94 J	1.09 J	1.57	0.80 J
PCB198	0.71 J	1.14 J	1.38	1.45
PCB199	17.13	24.37	32.19	19.95
PCB200	1.72	2.30	3.09	1.88
PCB201	2.81	4.10	5.42	3.62
PCB203/196	12.79	17.44	22.70	12.82
PCB205	0.84 J	0.86 J	1.22	1.17
PCB206	11.72	15.28	18.38	10.26
PCB207	1.57	2.01	2.51	1.36
PCB209	3.28	4.05	4.81	2.84

Surrogate Recovery (%)				
PCB104	92	96	93	104
PCB14	61	62	61	52
PCB34	81	95	103	81
PCB112	84	89	86	107

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-L-B-9	T-L-B-10	T-L-B-11	T-L-B-12
Cl 1	863.94	1796.16	2302.64	1770.45
Cl 2	6052.19	11887.00	16654.60	399.90
Cl 3	7313.90	10389.93	12814.23	7033.88
Cl 4	4547.76	5423.11	6072.01	4981.99
Cl 5	1170.74	1483.40	1938.98	1453.94
Cl 6	587.44	815.22	1203.20	793.46
Cl 7	195.40	310.11	427.45	308.70
Cl 8	56.56	78.13	100.75	60.22
Cl 9	13.28	17.29	20.88	11.62
Cl 10	3.28	4.05	4.81	2.84
SUM PCB	20807.74241	32210.10367	41547.00611	16822.65196

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Client Reporting Sample ID:	T-L-B-13	T-L-B-14	T-L-B-15	T-L-B-16
Battelle Sample ID:	W2730	W2731	W2732	W2733
Extraction Batch ID:	01-207	01-207	01-207	01-207
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	51.42	51.05	57.09	48.36
Sample Dry Weight (g):	6.39	7.90	5.74	8.47
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	8.26	6.70	3.09	1.90 J
PCB1	803.89 Y	703.69 Y	582.07 D	324.91 D
PCB3	504.29	517.34	513.87 D	213.10 D
PCB4/10	6433.72 D	5287.46 D	58.34 Y	63.18 Y
PCB6	136.01	133.19	121.14 D	81.07 Y
PCB7/9	36.12	35.70	38.44	19.65
PCB8/5	1963.89 D	1775.69 D	22.55 Y	24.40 Y
PCB12/13	14.25	13.63	15.08	6.55
PCB16/32	2291.48 D	2037.10 D	25.09 Y	28.68 Y
PCB17	1118.30 Y	1136.71 Y	1054.28 D	586.84 D
PCB18	453.32	442.21	380.41 D	201.59 D
PCB19	2121.14 D	1770.15 D	2068.33 D	1122.88 D
PCB21	ND U	ND U	ND U	ND U
PCB22	4.58	4.51	5.49	8.66
PCB24/27	1055.81 Y	1002.88 Y	870.38 D	497.71 D
PCB25	96.32	103.33	105.88 D	81.03
PCB26	313.23	315.46	312.90 D	143.38 D
PCB28	23.45	27.22	34.88	50.83
PCB29	ND U	ND U	ND U	ND U
PCB31	382.64	377.03	364.09 D	161.71 D
PCB33/20	ND U	ND U	ND U	6.08
PCB40	54.90	52.52	4.18	6.12
PCB41/64/71	227.65	226.58	215.23 D	105.71 D
PCB42	18.36	16.50	20.74	20.06
PCB43	ND U	ND U	ND U	ND U
PCB44	27.08	26.33	38.95	71.35
PCB45	28.76	28.01	32.29	23.35
PCB46	5.15	5.95	7.09	6.68
PCB47/75	678.19	665.69 Y	532.26 D	313.62 D
PCB48	ND U	ND U	ND U	ND U
PCB49	849.08 Y	830.83 Y	624.44 D	381.36 D
PCB51	847.82 Y	795.95 Y	683.22 D	370.28 D
PCB52	987.48 Y	963.74 Y	833.65 D	444.33 D
PCB53	1188.85 Y	1132.36 Y	967.71 D	572.51 D
PCB56/60	6.25	6.31	8.29	14.85
PCB59	13.74	14.97	19.77	15.29
PCB63	3.32	3.36	5.01	4.61
PCB66	24.11	24.77	32.73	49.34
PCB70/76	30.16	31.01	42.42	51.21
PCB74	20.54	17.69	20.31	22.16
PCB82	2.15	2.26	2.89	3.79
PCB83	6.38	6.53	8.12	5.28
PCB84	49.99	48.33	61.44	38.37
PCB85	ND U	12.12	13.91	3.08
PCB87/115	10.05	8.51	10.99	10.75
PCB89	ND U	ND U	ND U	ND U
PCB91	116.39	108.14	98.32 D	80.20
PCB92	42.24	41.00	60.43	46.68
PCB95	524.79	516.20	412.87 D	235.98 D
PCB97	4.16	3.69	3.76	6.83
PCB99	26.23	21.39	23.77	26.40
PCB100	53.79	51.79	67.38	36.77
PCB101/90	64.11	54.64	62.92	50.44
PCB105	8.67	8.84	10.65	9.42
PCB107	11.91	11.18	15.34	11.11
PCB110	393.67	374.67	336.63 D	165.81 D
PCB114	ND U	1.35	0.43 J	0.48 J
PCB118	67.87	61.35	86.66	67.75
PCB119	24.32	25.56	33.97	20.33
PCB124	ND U	ND U	ND U	ND U
PCB128	10.94	9.68	12.73	9.29

Client Reporting Sample ID:	T-L-B-13	T-L-B-14	T-L-B-15	T-L-B-16
PCB129	0.99 J	0.88 J	1.25 J	0.77 J
PCB130	9.00	8.11	9.91	5.82
PCB131	ND U	16.25	ND U	ND U
PCB132	22.05	18.67	19.03	13.32
PCB134	11.45	10.87	14.18	8.90
PCB135/144	48.23	44.45	56.28	30.90
PCB136	45.81	42.97	49.85	27.01
PCB137	2.29	1.69	1.92	2.00
PCB138/160/163	220.00	209.51	156.91 D	91.81 D
PCB141	2.68	2.40	2.87	2.60
PCB146	42.51	37.94	51.27	30.53
PCB149	95.92	80.70	97.81	68.11
PCB151	64.50	62.46	85.23	49.30
PCB153	119.38	103.24	75.61 D	82.26
PCB156	5.86	5.26	5.88	4.53
PCB158	4.32	3.53	3.91	3.25
PCB167	3.27	2.87	3.39	2.44
PCB169	ND U	ND U	ND U	ND U
PCB170/190	24.05	22.91	29.75	16.22
PCB171	7.16	6.57	8.58	5.33
PCB172	1.52	1.47	1.52 J	0.95 J
PCB173	ND U	ND U	ND U	ND U
PCB174	13.21	11.80	15.35	8.54
PCB175	0.96 J	0.86 J	1.14 J	0.73 J
PCB176	3.42	3.22	3.24	2.04
PCB177	26.49	24.85	32.76	16.89
PCB178	19.96	19.23	23.15	11.62
PCB180	30.82	29.34	36.14	18.77
PCB183	8.12	7.50	8.97	4.63
PCB184	ND U	ND U	ND U	ND U
PCB185	0.89 J	0.70 J	1.04 J	ND U
PCB187/182	51.37	46.77	59.25	29.65
PCB189	1.32 J	1.17	2.72	1.10
PCB191	0.68 J	0.70 J	0.87 J	0.45 J
PCB193	4.03	3.64	4.39	3.04
PCB194	9.51	8.66	11.09	6.03
PCB195	4.09	3.35	4.43	3.01
PCB197	0.79 J	0.78 J	0.86 J	0.56 J
PCB198	0.66 J	0.83 J	0.91 J	ND U
PCB199	13.12	12.97	13.93	7.62
PCB200	1.50	1.35	1.56 J	0.95 J
PCB201	2.40	2.21	2.66	1.79
PCB203/196	9.27	9.06	9.59	5.71
PCB205	ND U	0.54 J	0.89 J	ND U
PCB206	6.57	6.42	8.26	4.78
PCB207	1.03 J	1.00	1.06 J	0.77 J
PCB209	1.74	1.89	2.76	1.40

Surrogate Recovery (%)				
PCB104	84	91	71	101
PCB14	52	57	40 &	66
PCB34	76	84	55	85
PCB112	71	78	72	99

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-L-B-13	T-L-B-14	T-L-B-15	T-L-B-16
Cl 1	1308.18	1221.04	1095.94	538.01
Cl 2	8583.98	7245.66	255.54	194.86
Cl 3	7860.27	7216.59	5221.74	2889.40
Cl 4	5011.44	4842.56	4088.30	2472.84
Cl 5	1406.75	1357.55	1310.47	819.47
Cl 6	709.20	661.48	648.03	432.83
Cl 7	193.99	180.73	228.88	119.96
Cl 8	41.33	39.75	45.91	25.66
Cl 9	7.60	7.42	9.32	5.54
Cl 10	1.74	1.89	2.76	1.40
SUM PCB	25132.74196	22781.38101	12909.97697	7501.872232

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Field Samples

Client Reporting Sample ID:	T-L-B-17	T-L-B-18	T-L-B-19	T-L-B-20
Battelle Sample ID:	W2734	W2735	W2736	W2737
Extraction Batch ID:	01-207	01-207	01-207	01-207
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	40.18	42.24	49.93	44.40
Sample Dry Weight (g):	10.37	8.37	7.62	9.08
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.45 J	0.61 J	0.57 J	0.48 J
PCB1	50.45	13.02	19.12	18.39
PCB3	14.85	7.35	19.78	19.69
PCB4/10	352.75	99.20 Y	156.45	143.39
PCB6	11.55	13.75	37.69	37.50
PCB7/9	2.50	3.36	10.90	11.23
PCB8/5	83.67	51.97	115.30	117.01
PCB12/13	0.75 J	1.26	1.99	2.11
PCB16/32	138.59	99.51	209.07	202.31
PCB17	64.51	64.75	129.83	137.51
PCB18	26.73	31.09	80.57	119.64
PCB19	114.66	58.24	114.65	108.27
PCB21	ND U	ND U	ND U	ND U
PCB22	4.11	6.72	9.56	5.48
PCB24/27	45.51	30.05	66.89	59.22
PCB25	16.32	32.56	78.38	70.63
PCB26	24.51	45.35	105.66	109.19
PCB28	33.07	44.35	60.85	21.82
PCB29	ND U	ND U	ND U	ND U
PCB31	29.79	43.83	86.24	88.69
PCB33/20	6.38	9.39	13.98	3.69
PCB40	6.35	5.51	14.55	11.43
PCB41/64/71	34.70	62.72	103.34	91.16
PCB42	15.88	28.56	42.70	27.28
PCB43	ND U	ND U	ND U	ND U
PCB44	33.21	65.70	94.28	44.02
PCB45	6.38	9.15	15.67	9.26
PCB46	2.43	4.11	6.43	3.43
PCB47/75	76.34	106.91	182.72	148.46
PCB48	ND U	ND U	ND U	ND U
PCB49	91.39	138.27	273.87	252.94
PCB51	49.29	37.09	89.78	73.28
PCB52	94.69	149.03	287.18	267.69
PCB53	61.90	49.21	124.51	117.13
PCB56/60	9.36	13.70	11.14	4.74
PCB59	3.39	6.52	9.55	5.54
PCB63	1.74	2.64	3.07	1.29
PCB66	31.95	45.26	43.07	17.36
PCB70/76	19.35	28.89	24.81	9.87
PCB74	20.39	32.97	32.88	17.67
PCB82	2.18	3.19	4.28	2.37
PCB83	2.42	3.61	5.65	3.21
PCB84	13.28	19.92	36.43	24.83
PCB85	4.84	6.12	9.59	5.08
PCB87/115	5.69	7.31	10.33	5.64
PCB89	ND U	ND U	ND U	ND U
PCB91	23.12	29.75	56.06	42.56
PCB92	9.36	12.32	22.02	10.74
PCB95	59.27	79.09	144.72	103.67
PCB97	8.48	13.93	16.25	8.06
PCB99	28.15	48.66	58.75	31.93
PCB100	4.68	3.69	9.65	7.08
PCB101/90	37.72	57.25	70.49	37.60
PCB105	5.37	6.57	10.37	5.03
PCB107	2.62	4.22	5.59	2.74
PCB110	89.75	148.15	232.37	154.81
PCB114	ND U	ND U	0.93 J	ND U
PCB118	37.15	60.87	74.61	37.82
PCB119	5.27	6.72	13.68	8.08
PCB124	0.39 J	ND U	0.70 J	ND U
PCB128	6.57	7.72	15.70	8.30

Client Reporting Sample ID:	T-L-B-17	T-L-B-18	T-L-B-19	T-L-B-20
PCB129	0.74 J	0.70 J	1.62	0.85 J
PCB130	2.55	3.18	5.64	3.55
PCB131	ND U	ND U	ND U	ND U
PCB132	9.21	13.54	25.61	17.62
PCB134	1.95	3.05	4.49	2.79
PCB135/144	8.93	10.26	22.04	13.10
PCB136	8.14	8.69	19.04	13.26
PCB137	1.25	1.56	2.78	1.44
PCB138/160/163	41.02	55.19	97.69	56.98
PCB141	1.97	3.28	4.56	2.33
PCB146	8.54	10.13	19.45	11.14
PCB149	45.16	58.84	116.87	78.41
PCB151	8.91	10.62	20.78	11.64
PCB153	43.09	52.97	99.59	59.28
PCB156	2.38	3.09	6.34	3.21
PCB158	1.95	2.89	5.27	2.82
PCB167	1.27	1.29	2.90	1.73
PCB169	ND U	ND U	ND U	ND U
PCB170/190	5.54	5.03	14.19	8.35
PCB171	1.75	2.43	4.42	3.03
PCB172	0.32 J	0.35 J	0.84 J	0.48 J
PCB173	ND U	ND U	ND U	ND U
PCB174	4.14	4.55	9.59	5.23
PCB175	ND U	0.32 J	0.49 J	ND U
PCB176	0.82 J	1.01 J	1.76	1.27
PCB177	4.78	4.94	11.29	7.74
PCB178	2.08	2.11	4.44	2.76
PCB180	6.90	8.11	18.32	10.55
PCB183	2.11	2.69	5.41	3.29
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	0.54 J	ND U
PCB187/182	9.29	8.34	21.24	13.88
PCB189	ND U	ND U	0.71 J	0.41 J
PCB191	ND U	ND U	0.46 J	0.29 J
PCB193	0.68 J	0.86 J	1.54	0.86 J
PCB194	1.31	ND U	3.25	1.97
PCB195	0.61 J	ND U	1.67	0.99
PCB197	ND U	ND U	ND U	0.21 J
PCB198	ND U	ND U	ND U	0.30 J
PCB199	1.98	1.46	4.45	3.05
PCB200	0.24 J	ND U	0.67 J	0.49 J
PCB201	0.36 J	ND U	0.96 J	0.65 J
PCB203/196	1.59	1.61	3.57	2.50
PCB205	ND U	ND U	ND U	ND U
PCB206	0.88	0.77 J	2.09	1.42
PCB207	0.17 J	ND U	0.25 J	0.21 J
PCB209	0.34 J	0.31 J	0.63 J	0.39 J

Surrogate Recovery (%)				
PCB104	64	82	78	70
PCB14	43	62	55	50
PCB34	53	55	70	58
PCB112	62	88	75	68

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-L-B-17	T-L-B-18	T-L-B-19	T-L-B-20
Cl 1	65.29	20.37	38.90	38.08
Cl 2	451.22	169.53	322.34	311.24
Cl 3	504.17	465.83	955.68	926.43
Cl 4	558.75	786.24	1359.55	1102.56
Cl 5	339.72	511.38	782.49	491.26
Cl 6	193.61	246.99	470.37	288.46
Cl 7	38.42	40.74	95.23	58.14
Cl 8	6.10	3.07	14.58	10.16
Cl 9	1.05	0.77	2.33	1.63
Cl 10	0.34	0.31	0.63	0.39
SUM PCB	2159.126327	2245.836843	4042.657122	3228.8308

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TLC

Client Reporting Sample ID:	T-L-C-1	T-L-C-2	T-L-C-3	T-L-C-4
Battelle Sample ID:	W2684	W2685	W2686	W2687-1
Extraction Batch ID:	01-203	01-203	01-203	01-480
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	65.94	63.35	62.41	59.38
Sample Dry Weight (g):	5.56	6.24	6.51	6.15
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	3.91	2.41 J	1.67 J	2.22 J
PCB1	19.23 B	19.95 B	56.75 B	568.45 D
PCB3	9.82 B	9.72 B	30.75 B	158.94
PCB4/10	128.36 B	112.79 B	408.03 B	2451.55 D
PCB6	3.78	4.60	16.42	76.65
PCB7/9	1.03 J	1.31 J	4.42	22.77
PCB8/5	36.35 B	46.27 B	212.94 B	902.91 D
PCB12/13	0.85 J	1.07 J	2.16	6.32
PCB16/32	61.39 B	77.40 B	347.88 B	1738.45 D
PCB17	27.09	33.97	144.68	717.90 D
PCB18	15.01	15.11	49.67	301.96 Y
PCB19	66.77 B	66.45 B	248.36 B	1181.71 D
PCB21	ND U	ND U	ND U	ND U
PCB22	5.07	4.81	7.76	8.79
PCB24/27	32.02	33.57	137.13	608.69 D
PCB25	4.08	5.11	14.05	63.18
PCB26	11.93	12.84	39.37	154.59
PCB28	28.23	32.27	64.29	106.37
PCB29	0.22 J	0.49 J	0.80 J	1.99
PCB31	21.82	23.17	63.39	283.23 Y
PCB33/20	7.68	10.13	18.04	11.66
PCB40	4.78	4.87	6.07	46.11
PCB41/64/71	44.78	40.59	78.32	190.81
PCB42	16.66	16.10	29.38	34.56
PCB43	ND U	ND U	ND U	ND U
PCB44	35.10	34.20	57.40	81.05
PCB45	7.12	7.12	14.88	29.26
PCB46	2.41	2.37	3.96	9.49
PCB47/75	49.10	53.63	189.44	666.12 D
PCB48	4.83	10.60	ND U	ND U
PCB49	68.81	74.13	232.01	809.38 D
PCB51	29.78	30.76	120.95	540.67 D
PCB52	70.02	72.29	204.64	860.94 D
PCB53	42.34	44.95	175.16	872.53 D
PCB56/60	39.06	25.57	27.51	28.46
PCB59	4.68	3.73	8.67	18.03
PCB63	3.96	3.70	8.50	11.77
PCB66	68.55	59.64	91.18	123.62
PCB70/76	47.13	41.27	63.40	114.75
PCB74	60.24	38.88	64.73	54.36
PCB82	8.64	5.65	6.68	5.43
PCB83	5.15	4.01	7.80	11.71
PCB84	18.52	14.24	30.95	64.22
PCB85	14.53	10.13	14.76	8.51
PCB87/115	26.59	16.63	16.96	20.70
PCB89	32.55	26.56	52.89	ND U
PCB91	19.23	18.18	62.84	114.31
PCB92	20.05	14.42	37.74	70.32
PCB95	65.43	57.03	154.97	418.44 Y
PCB97	20.73	15.21	21.65	14.39
PCB99	43.19	36.17	86.90	78.79
PCB100	3.72	3.07	11.63	36.09
PCB101/90	37.48	32.52	63.10	113.73
PCB105	28.91	16.89	18.80	19.23
PCB107	8.43	5.40	12.91	24.93
PCB110	111.26	89.94	249.64	438.87 D
PCB114	1.48 J	0.88 J	1.23 J	ND U
PCB118	81.56	54.90	109.68	144.26
PCB119	4.98	4.46	16.52	40.45
PCB124	2.49	1.18 J	1.08 J	1.06 J
PCB128	17.78	9.78	18.49	22.85
PCB129	3.64	2.12	1.90	2.35
PCB130	5.65	3.80	8.49	14.29
PCB131	0.99 J	0.52 J	0.99 J	16.92
PCB132	21.66	14.99	32.11	33.10

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TLC

Client Reporting Sample ID:	T-L-C-1	T-L-C-2	T-L-C-3	T-L-C-4
Battelle Sample ID:	W2684	W2685	W2686	W2687-1
Extraction Batch ID:	01-203	01-203	01-203	01-480
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	65.94	63.35	62.41	59.38
Sample Dry Weight (g):	5.56	6.24	6.51	6.15
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
PCB134	4.06	3.16	7.72	14.71
PCB135/144	12.96	9.58	30.08	60.15
PCB136	9.09	7.24	19.79	43.20
PCB137	3.57	2.45	4.10	4.73
PCB138/160/163	96.04	61.74	145.23	244.34 Y
PCB141	7.81	4.27	6.52	6.37
PCB146	13.01	9.81	32.80	59.15
PCB149	48.10	37.34	115.91	159.01
PCB151	13.09	10.06	32.26	71.51
PCB153	56.55	41.78	126.70	194.15
PCB156	10.75	5.45	10.74	9.96
PCB158	6.11	3.45	5.58	7.43
PCB167	3.34	1.79	3.63	5.44
PCB169	ND U	ND U	ND U	ND U
PCB170/190	18.06	7.88	21.01	32.07
PCB171	2.99	2.22	5.04	9.01
PCB172	0.79 J	0.51 J	1.04 J	1.83
PCB173	ND U	0.38 J	0.42 J	0.58 J
PCB174	9.55	4.97	13.78	20.72
PCB175	0.52 J	0.25 J	0.65 J	1.06 J
PCB176	1.12 J	0.95 J	2.43	3.86
PCB177	9.48	4.65	15.73	32.06
PCB178	2.77	1.97	6.33	16.72
PCB180	19.01	9.08	26.14	42.37
PCB183	4.05	2.35	6.30	11.90
PCB184	ND U	ND U	ND U	ND U
PCB185	0.77 J	ND U	0.80 J	0.98 J
PCB187/182	11.26	6.82	25.55	54.15
PCB189	1.67	0.65 J	1.46	1.73
PCB191	0.64 J	0.34 J	0.76 J	1.00 J
PCB193	1.34 J	0.63 J	2.33	4.70
PCB194	4.96	1.63	5.01	9.76
PCB195	1.72	0.94 J	2.47	3.81
PCB197	ND U	ND U	0.30 J	0.61 J
PCB198	ND U	ND U	0.53 J	0.75 J
PCB199	4.05	1.59	5.90	13.46
PCB200	0.72 J	0.42 J	0.73 J	1.47 J
PCB201	0.72 J	0.36 J	0.96 J	2.18
PCB203/196	3.10	1.38 J	5.13	10.01
PCB205	ND U	ND U	0.32 J	0.56 J
PCB206	2.28	0.99 J	3.19	6.99
PCB207	0.37 J	0.15 J	0.30 J	0.91 J
PCB209	1.07 J	0.33 J	0.85 J	1.58
Surrogate Recovery (%)				
PCB104	58	58	59	81
PCB14	37 &	45	43	63
PCB34	43	48	56	83
PCB112	72	53	64	86

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-L-C-1	T-L-C-2	T-L-C-3	T-L-C-4
Cl 1	29.05	29.67	87.50	727.39
Cl 2	170.37	166.03	643.98	3460.20
Cl 3	281.31	315.33	1135.42	5178.51
Cl 4	599.33	564.39	1376.20	4491.93
Cl 5	554.95	427.47	978.75	1625.45
Cl 6	334.19	229.32	603.05	969.66
Cl 7	84.01	43.67	129.79	234.74
Cl 8	15.27	6.33	21.36	42.63
Cl 9	2.66	1.14	3.49	7.89
Cl 10	1.07	0.33	0.85	1.58
SUM PCB	2076.11	1786.10	4982.04	16742.19

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TLC

Client Reporting Sample ID:	T-L-C-5	T-L-C-6	T-L-C-7	T-L-C-8
Battelle Sample ID:	W2688	W2689	W2690	W2691-1
Extraction Batch ID:	01-203	01-203	01-203	01-480
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	53.83	51.03	53.90	54.30
Sample Dry Weight (g):	7.59	7.92	7.41	7.02
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	5.11	20.12	23.22	13.58
PCB1	1738.35 BD	1615.78 BD	4079.64 BD	5167.84 D
PCB3	561.42 BY	581.09 BD	1023.20 BD	549.96 D
PCB4/10	12399.68 BD	10757.17 BD	22492.52 BD	22589.08 D
PCB6	157.97	205.53	411.10 Y	299.72 Y
PCB7/9	35.02	61.08	105.00	67.43
PCB8/5	2515.66 BD	2239.44 BD	4788.36 BD	3081.70 D
PCB12/13	11.79	17.47	50.48	30.90
PCB16/32	2850.53 BD	2281.20 BD	4976.09 BD	5676.40 D
PCB17	1207.82 D	812.96 D	1435.43 D	1020.94 D
PCB18	334.07	489.93 Y	1098.84 D	701.29 D
PCB19	4871.69 BD	3654.13 BD	7060.49 BD	6719.90 D
PCB21	ND U	ND U	ND U	ND U
PCB22	4.24	3.81	17.45	13.91
PCB24/27	1708.58 D	1428.88 D	2727.94 D	2278.82 D
PCB25	53.55	49.59	148.30	92.45
PCB26	433.29 Y	400.23 Y	689.64 D	467.83 D
PCB28	25.68	18.07	58.83	51.32
PCB29	6.75	5.19	7.86	5.34
PCB31	382.71	401.00 Y	738.74 D	479.61 D
PCB33/20	ND U	ND U	ND U	62.50
PCB40	5.44	4.40	12.43	56.65
PCB41/64/71	313.32	239.68	462.90 Y	342.19 Y
PCB42	18.00	19.22	71.65	53.29
PCB43	ND U	ND U	ND U	ND U
PCB44	27.79	21.14	98.48	86.37
PCB45	45.40	36.36	81.19	66.44
PCB46	7.79	6.09	15.14	12.09
PCB47/75	813.67 D	583.12 D	851.45 D	692.49 D
PCB48	ND U	ND U	ND U	ND U
PCB49	933.45 D	831.87 D	1369.26 D	810.38 D
PCB51	1360.21 D	1084.01 D	1615.54 D	1225.39 D
PCB52	1080.35 D	968.91 D	1675.21 D	1176.35 D
PCB53	1442.23 D	1377.46 D	2367.95 D	1445.26 D
PCB56/60	8.71	6.97	28.77	23.34
PCB59	21.12	18.25	39.35	33.15
PCB63	4.72	3.80	10.54	9.71
PCB66	45.01	31.74	78.84	45.54
PCB70/76	57.92	38.98	77.47	47.86
PCB74	30.96	30.93	101.26	58.92
PCB82	2.77	2.97	13.36	12.41
PCB83	8.48	6.72	19.14	15.91
PCB84	73.51	61.53	139.33	92.63
PCB85	25.27	19.74	37.14	26.57
PCB87/115	12.06	8.35	39.22	41.62
PCB89	52.66	50.43	117.35	ND U
PCB91	186.03	155.93	295.15 Y	195.67 Y
PCB92	59.49	44.70	97.14	73.53
PCB95	595.29 D	473.04 D	775.68 D	556.43 D
PCB97	5.94	6.27	27.45	24.08
PCB99	39.42	41.79	137.65	96.88
PCB100	102.25	72.51	79.29	46.11
PCB101/90	47.17	51.99	115.09	159.10
PCB105	11.24	9.78	42.76	30.18
PCB107	22.74	15.47	26.06	17.10
PCB110	678.28 Y	477.69 Y	870.30 D	477.44 D
PCB114	2.03	1.55	3.37	1.92
PCB118	112.85	97.88	226.35	138.37
PCB119	39.35	28.17	39.74	25.16
PCB124	0.42 J	0.35 J	1.85	2.00
PCB128	16.15	14.56	47.54	36.33
PCB129	1.33	1.43	6.92	4.54
PCB130	16.61	12.51	27.19	18.65
PCB131	0.75 J	0.60 J	1.92	17.05
PCB132	33.32	28.34	87.06	58.01

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TLC

Client Reporting Sample ID:	T-L-C-5	T-L-C-6	T-L-C-7	T-L-C-8
Battelle Sample ID:	W2688	W2689	W2690	W2691-1
Extraction Batch ID:	01-203	01-203	01-203	01-480
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	53.83	51.03	53.90	54.30
Sample Dry Weight (g):	7.59	7.92	7.41	7.02
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
PCB134	21.13	15.63	28.32	20.52
PCB135/144	80.82	62.64	105.38	73.79
PCB136	75.96	59.83	99.96	65.18
PCB137	3.08	3.00	9.92	7.39
PCB138/160/163	411.63	303.65	495.41 Y	349.90 Y
PCB141	4.27	3.97	14.80	12.41
PCB146	75.61	59.32	93.41	59.51
PCB149	144.59	135.30	344.30 Y	238.30 Y
PCB151	109.53	78.71	121.08	85.43
PCB153	202.40	170.00	333.32 Y	213.12 Y
PCB156	11.03	8.92	32.05 Y	17.09
PCB158	5.96	6.04	20.20	16.27
PCB167	4.76	4.42	10.61	8.45
PCB169	ND U	ND U	ND U	ND U
PCB170/190	47.38	35.38	72.31	40.52
PCB171	10.87	8.32	16.67	12.16
PCB172	2.81	2.06	3.53	2.31
PCB173	ND U	0.52 J	0.95 J	0.77 J
PCB174	22.79	17.74	37.02	26.37
PCB175	1.42	1.08 J	1.90	1.55
PCB176	5.65	4.31	8.13	5.57
PCB177	50.46	35.98	54.84	35.86
PCB178	42.18	27.20	27.58	17.08
PCB180	58.68	44.16	86.22	48.91
PCB183	13.06	10.09	20.48	14.91
PCB184	ND U	ND U	ND U	ND U
PCB185	1.12 J	0.84 J	2.08	1.46
PCB187/182	88.79	65.26	90.88	61.62
PCB189	3.98	2.84	4.76	2.02
PCB191	1.40	1.05 J	1.93	1.12 J
PCB193	8.36	5.99	7.57	4.74
PCB194	21.55	14.71	17.20	8.02
PCB195	7.51	5.39	6.70	3.62
PCB197	1.35	0.87 J	0.91 J	0.52 J
PCB198	1.41	0.70 J	1.03 J	0.56 J
PCB199	27.09	17.61	19.58	11.25
PCB200	2.63	1.76	2.32	1.48
PCB201	4.43	2.98	3.17	1.93
PCB203/196	18.42	12.82	15.55	8.48
PCB205	1.22	0.92	0.99	0.37 J
PCB206	16.04	10.55	9.43	4.83
PCB207	1.95	1.34	1.22	0.61 J
PCB209	4.17	2.58	2.17	0.95 J
Surrogate Recovery (%)				
PCB104	99	77	82	77
PCB14	40	48	61	63
PCB34	99	94	139 &	117
PCB112	92	71	80	80

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-L-C-5	T-L-C-6	T-L-C-7	T-L-C-8
Cl 1	2299.77	2196.87	5102.84	5717.80
Cl 2	15120.12	13280.69	27847.47	26068.83
Cl 3	11878.91	9544.98	18959.62	17570.31
Cl 4	6216.09	5302.91	8957.44	6185.41
Cl 5	2077.24	1626.85	3103.41	2033.12
Cl 6	1218.95	968.87	1879.39	1301.94
Cl 7	358.95	262.82	436.85	276.96
Cl 8	85.62	57.76	67.46	36.23
Cl 9	17.99	11.89	10.64	5.44
Cl 10	4.17	2.58	2.17	0.95
SUM PCB	39282.93	33276.35	66390.52	59210.57

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TLC

Client Reporting Sample ID:	T-L-C-9	T-L-C-10	T-L-C-11	T-L-C-12
Battelle Sample ID:	W2692	W2693	W2694	W2695
Extraction Batch ID:	01-203	01-203	01-203	01-203
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	48.24	54.99	56.78	56.91
Sample Dry Weight (g):	8.55	7.90	7.71	7.11
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	4.72	4.05	2.14 J	1.46 J
PCB1	735.56 BD	410.39 BY	133.61 B	134.16 B
PCB3	398.31 BY	349.52 BY	47.15 B	62.89 B
PCB4/10	5907.83 BD	3928.37 BD	702.71 BD	414.46 BY
PCB6	117.58	93.88	45.43	70.01
PCB7/9	32.48	25.99	11.65	24.40
PCB8/5	1739.70 BD	1492.38 BD	200.07 B	245.60 B
PCB12/13	11.44	6.92	1.86	2.26
PCB16/32	2159.04 BD	1625.98 BD	253.48 B	365.43 BY
PCB17	754.62 D	654.37 D	132.29	225.16
PCB18	389.34 Y	306.81	86.02	184.49
PCB19	2112.34 BD	1471.30 BD	196.27 B	194.22 B
PCB21	ND U	ND U	ND U	ND U
PCB22	3.96	5.74	8.24	6.53
PCB24/27	861.76 D	661.42 D	85.54	108.11
PCB25	83.79	73.96	75.26	121.04
PCB26	278.58	204.96	94.21	162.54
PCB28	18.13	37.75	64.93	46.31
PCB29	3.05	2.68	0.38 J	0.55 J
PCB31	297.30 Y	236.99	73.74	113.91
PCB33/20	ND U	ND U	20.06	7.78
PCB40	3.04	5.02	8.69	6.88
PCB41/64/71	195.05	130.02	92.61	145.55
PCB42	15.83	15.25	38.54	36.51
PCB43	ND U	ND U	ND U	ND U
PCB44	24.25	46.05	79.73	60.93
PCB45	23.48	23.01	14.31	14.49
PCB46	5.30	6.61	5.49	5.65
PCB47/75	490.34 Y	429.84 Y	153.54	231.01
PCB48	ND U	ND U	ND U	ND U
PCB49	662.40 D	603.47 Y	265.88	440.73 Y
PCB51	619.07 D	493.38 Y	78.42	120.88
PCB52	681.64 D	570.73 D	252.54	427.59 Y
PCB53	881.27 D	716.09 D	114.18	195.64
PCB56/60	5.10	12.51	14.97	5.96
PCB59	14.14	15.03	9.80	8.78
PCB63	2.88	4.06	3.56	2.32
PCB66	22.62	46.18	51.96	24.53
PCB70/76	21.61	40.98	30.03	15.85
PCB74	16.52	23.84	41.08	24.01
PCB82	2.11	2.87	5.02	3.41
PCB83	5.58	5.80	5.74	5.33
PCB84	41.81	35.77	32.84	40.10
PCB85	10.10	11.15	10.63	8.89
PCB87/115	6.80	7.96	10.60	9.50
PCB89	24.09	24.65	35.73	25.04
PCB91	91.33	66.36	50.45	65.28
PCB92	32.82	36.31	21.97	20.92
PCB95	405.39 Y	344.35	120.41	170.33
PCB97	3.71	8.32	18.19	10.54
PCB99	19.55	28.28	61.30	44.35
PCB100	40.57	33.85	8.47	13.49
PCB101/90	26.89	23.12	34.00	24.90
PCB105	9.03	10.96	11.35	8.32
PCB107	9.45	10.97	6.64	5.82
PCB110	319.42 Y	275.36	206.74	248.47
PCB114	0.96 J	1.08 J	0.83 J	0.76 J
PCB118	52.66	58.70	78.50	61.85
PCB119	19.75	19.64	13.97	17.75
PCB124	0.28 J	0.38 J	0.68 J	0.43 J
PCB128	10.24	9.73	16.06	15.20
PCB129	0.95 J	1.10 J	1.62	1.20 J
PCB130	8.22	7.08	6.40	7.37
PCB131	0.32 J	0.28 J	0.60 J	0.64 J
PCB132	16.62	14.46	25.24	28.11

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TLC

Client Reporting Sample ID:	T-L-C-9	T-L-C-10	T-L-C-11	T-L-C-12
Battelle Sample ID:	W2692	W2693	W2694	W2695
Extraction Batch ID:	01-203	01-203	01-203	01-203
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	48.24	54.99	56.78	56.91
Sample Dry Weight (g):	8.55	7.90	7.71	7.11
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
PCB134	9.18	7.86	4.85	5.26
PCB135/144	34.65	28.24	19.35	23.23
PCB136	33.22	24.02	15.65	20.69
PCB137	1.84	2.04	2.84	2.60
PCB138/160/163	177.04	150.60	94.75	102.22
PCB141	2.55	2.93	4.20	3.56
PCB146	29.24	24.82	19.00	20.67
PCB149	68.98	53.88	96.40	117.04
PCB151	46.57	42.62	19.00	21.81
PCB153	80.72	69.99	90.01	95.87
PCB156	5.82	5.45	7.33	6.89
PCB158	3.93	3.44	4.96	5.22
PCB167	2.86	2.39	2.84	2.93
PCB169	ND U	ND U	ND U	ND U
PCB170/190	22.05	17.14	13.45	14.24
PCB171	5.25	3.99	4.02	5.15
PCB172	1.27	0.99 J	0.76 J	0.94 J
PCB173	0.30 J	0.26 J	0.36 J	0.79 J
PCB174	9.76	8.16	8.40	9.53
PCB175	0.72 J	0.54 J	0.55 J	0.82 J
PCB176	2.52	1.91	1.62	2.22
PCB177	20.14	15.41	10.25	14.40
PCB178	16.19	14.12	4.27	6.22
PCB180	26.45	21.24	18.94	22.52
PCB183	6.37	5.23	5.02	6.37
PCB184	ND U	ND U	ND U	ND U
PCB185	0.55 J	0.59 J	0.65 J	0.53 J
PCB187/182	34.91	27.34	18.33	25.52
PCB189	1.67	1.22	0.96 J	1.22 J
PCB191	0.67 J	0.57 J	0.45 J	0.89 J
PCB193	2.87	2.35	1.30	1.66
PCB194	8.61	7.13	3.38	4.76
PCB195	3.38	2.61	1.30	2.07
PCB197	0.53 J	0.46 J	0.29 J	0.39 J
PCB198	0.78 J	0.61 J	0.23 J	0.55 J
PCB199	10.13	8.65	4.18	5.70
PCB200	0.99 J	0.86 J	0.57 J	0.75 J
PCB201	1.70	1.51	0.81 J	1.06 J
PCB203/196	7.54	6.03	3.36	4.85
PCB205	0.42 J	0.37 J	0.23 J	0.34 J
PCB206	6.53	5.19	2.38	3.43
PCB207	0.81	0.77 J	0.35 J	0.44 J
PCB209	1.86	1.55	0.80 J	0.93 J
Surrogate Recovery (%)				
PCB104	84	76	76	61
PCB14	61	60	67	51
PCB34	87	84	77	60
PCB112	83	75	87	73

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-L-C-9	T-L-C-10	T-L-C-11	T-L-C-12
Cl 1	1133.87	759.91	180.75	197.05
Cl 2	7809.02	5547.54	961.72	756.72
Cl 3	6961.91	5281.96	1090.43	1536.07
Cl 4	3684.56	3182.08	1255.34	1767.30
Cl 5	1122.31	1005.87	734.06	785.47
Cl 6	532.95	450.91	431.10	480.53
Cl 7	151.69	121.05	89.32	113.04
Cl 8	34.09	28.23	14.33	20.46
Cl 9	7.33	5.97	2.73	3.88
Cl 10	1.86	1.55	0.80	0.93
SUM PCB	21444.31	16389.11	4762.73	5662.90

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TLC

Client Reporting Sample ID:	T-L-C-13	T-L-C-14	T-L-C-15	T-L-C-16
Battelle Sample ID:	W2696	W2697	W2698	W2699
Extraction Batch ID:	01-203	01-203	01-203	01-203
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	55.67	54.46	55.60	51.44
Sample Dry Weight (g):	8.22	7.52	6.99	7.86
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	2.04	2.06 J	4.49	8.64
PCB1	303.74 BY	824.16 BD	1364.23 BD	2773.57 BD
PCB3	205.70 B	634.79 BD	1222.53 BD	975.78 BD
PCB4/10	816.59 BD	4220.08 BD	15600.17 BD	23159.42 BD
PCB6	61.86	96.16	153.70	112.67
PCB7/9	13.04	7.97	5.94	7.19
PCB8/5	383.84 BY	998.13 BD	3208.72 BD	3769.28 BD
PCB12/13	2.15	4.65	12.64	12.45
PCB16/32	496.62 BY	1314.32 BD	6916.72 BD	4743.53 BD
PCB17	371.27 Y	849.70 D	1719.25 D	782.95 D
PCB18	121.20	130.52	189.84	136.63
PCB19	232.80 B	924.33 BD	6004.07 BD	6634.47 BD
PCB21	ND U	ND U	ND U	ND U
PCB22	2.19	3.13	4.83	3.92
PCB24/27	125.22	313.10 Y	2820.67 D	2769.54 D
PCB25	66.00	62.32	19.94	4.18
PCB26	101.98	133.87	190.46	137.85
PCB28	12.41	14.59	18.97	14.73
PCB29	0.59 J	1.59	7.36	7.85
PCB31	72.34	97.80	168.43	162.17
PCB33/20	ND U	ND U	ND U	ND U
PCB40	2.26	2.26	3.13	2.84
PCB41/64/71	134.73	270.45 Y	294.19 Y	85.19
PCB42	18.07	28.16	27.18	10.86
PCB43	ND U	ND U	ND U	ND U
PCB44	17.97	22.06	34.37	32.69
PCB45	9.52	16.21	44.43	59.67
PCB46	4.16	6.12	8.50	5.04
PCB47/75	277.14	551.19 D	1270.15 D	751.13 D
PCB48	ND U	ND U	ND U	ND U
PCB49	372.43 Y	547.17 D	726.59 D	392.96 D
PCB51	147.67	368.56 Y	2014.19 D	1477.34 D
PCB52	356.64 Y	539.66 D	964.94 D	755.92 D
PCB53	247.71	549.54 D	2569.42 D	1789.25 D
PCB56/60	1.23	1.89	3.50	3.22
PCB59	5.86	10.61	27.21	25.72
PCB63	0.89 J	1.26	2.62	1.72
PCB66	5.05	7.57	10.36	15.98
PCB70/76	4.32	5.56	10.76	19.51
PCB74	9.96	11.60	13.34	9.46
PCB82	1.17	1.37	0.49 J	0.29 J
PCB83	3.62	6.04	8.43	4.02
PCB84	30.05	63.86	92.09	48.79
PCB85	5.28	7.58	9.76	13.89
PCB87/115	3.16	2.85	ND U	ND U
PCB89	15.17	22.33	67.04	45.44
PCB91	71.28	192.91	469.59 D	342.14 D
PCB92	11.66	22.13	75.31	52.89
PCB95	153.48	339.90 Y	887.78 D	768.40 D
PCB97	3.73	4.90	3.60	2.18
PCB99	25.47	34.17	38.84	15.08
PCB100	16.93	45.32	153.14	145.22
PCB101/90	15.19	29.90	72.44	62.85
PCB105	2.28	2.60	1.91	1.09 J
PCB107	3.35	5.58	8.81	9.74
PCB110	177.21	354.06 Y	559.72 D	538.72 D
PCB114	0.45 J	0.87 J	2.44	1.66
PCB118	23.47	24.96	28.28	43.74
PCB119	15.64	30.32	59.76	30.19
PCB124	0.17 J	ND U	ND U	ND U
PCB128	8.01	10.18	2.47	1.62
PCB129	0.51 J	0.73 J	0.42 J	2.89
PCB130	5.31	9.09	2.61	1.36
PCB131	4.12	0.50 J	ND U	ND U
PCB132	20.06	32.52	11.36	4.32

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TLC

Client Reporting Sample ID:	T-L-C-13	T-L-C-14	T-L-C-15	T-L-C-16
Battelle Sample ID:	W2696	W2697	W2698	W2699
Extraction Batch ID:	01-203	01-203	01-203	01-203
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	55.67	54.46	55.60	51.44
Sample Dry Weight (g):	8.22	7.52	6.99	7.86
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
PCB134	4.43	9.63	17.19	8.55
PCB135/144	18.65	43.30	115.93	71.68
PCB136	19.83	49.86	125.89	98.22
PCB137	1.25	1.77	0.53 J	0.41 J
PCB138/160/163	79.34	165.04	309.21 Y	193.40 Y
PCB141	1.47	1.91	0.90 J	0.58 J
PCB146	17.66	36.72	99.69	66.14
PCB149	115.75	273.58 Y	408.91 Y	136.72
PCB151	15.00	30.68	71.03	39.09
PCB153	72.04	118.45	164.87	99.24
PCB156	3.94	6.07	1.13 J	0.99 J
PCB158	3.36	5.22	1.18 J	0.99 J
PCB167	1.67	2.55	0.51 J	0.61 J
PCB169	ND U	ND U	ND U	ND U
PCB170/190	12.40	29.49	5.63	4.64
PCB171	4.90	10.27	3.13	1.38
PCB172	0.82 J	1.73	0.72 J	0.55 J
PCB173	0.27 J	0.38 J	0.19 J	ND U
PCB174	6.99	12.86	7.39	4.00
PCB175	0.62 J	1.31	ND U	0.21 J
PCB176	2.45	5.46	5.45	1.74
PCB177	14.76	35.50	49.56	21.86
PCB178	7.06	18.86	61.74	47.59
PCB180	17.74	35.33	7.99	5.43
PCB183	5.77	11.94	2.18	1.12 J
PCB184	ND U	ND U	0.36 J	0.20 J
PCB185	0.38 J	0.70 J	ND U	ND U
PCB187/182	27.70	70.87	162.99	87.24
PCB189	1.07 J	2.24	0.77 J	0.63 J
PCB191	0.44 J	0.74 J	0.22 J	0.16 J
PCB193	1.63	3.61	10.64	8.00
PCB194	4.85	12.16	8.63	7.86
PCB195	2.33	4.77	2.98	2.38
PCB197	0.41 J	0.83 J	1.78	1.26
PCB198	0.53 J	0.79 J	0.52 J	0.35 J
PCB199	6.15	15.46	31.17	24.74
PCB200	0.73 J	1.74	1.47	0.85 J
PCB201	1.08 J	2.92	7.17	4.73
PCB203/196	4.87	11.95	7.17	5.45
PCB205	0.30 J	0.65 J	0.64 J	0.47 J
PCB206	3.24	8.05	11.96	17.17
PCB207	0.42 J	1.19	2.17	2.54
PCB209	0.95	2.13	4.40	7.58
Surrogate Recovery (%)				
PCB104	65	67	68	78
PCB14	55	51	48	57
PCB34	64	69	197 &	237 &
PCB112	76	83	69	80

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-L-C-13	T-L-C-14	T-L-C-15	T-L-C-16
Cl 1	509.44	1458.95	2586.75	3749.35
Cl 2	1277.48	5326.99	18981.16	27061.01
Cl 3	1602.62	3845.28	18060.55	15397.82
Cl 4	1615.61	2939.86	8024.89	5438.49
Cl 5	578.78	1191.67	2539.44	2126.32
Cl 6	392.41	797.81	1333.82	726.80
Cl 7	105.00	241.28	318.97	184.77
Cl 8	21.23	51.27	61.53	48.10
Cl 9	3.66	9.25	14.13	19.71
Cl 10	0.95	2.13	4.40	7.58
SUM PCB	6109.22	15866.55	51930.14	54768.59

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TLC

Client Reporting Sample ID:	T-L-C-17	T-L-C-18	T-L-C-19	T-L-C-20
Battelle Sample ID:	W2700	W2701	W2702	W2703
Extraction Batch ID:	01-203	01-203	01-203	01-203
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	40.48	36.58	38.08	33.02
Sample Dry Weight (g):	11.05	10.88	9.08	10.59
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	5.57	2.52	2.06	2.45
PCB1	1857.44 BD	570.61 BD	269.38 BY	17.45 B
PCB3	305.54 BD	78.84 B	104.45 B	4.16 B
PCB4/10	10271.94 BD	2303.61 BD	1335.48 BD	99.23 B
PCB6	56.63	65.00	76.60	1.87
PCB7/9	8.40	8.90	8.88	0.59 J
PCB8/5	1162.40 BD	511.44 BD	796.33 BD	23.75 B
PCB12/13	8.23	18.31	26.03	0.22 J
PCB16/32	1848.77 BD	299.99 BD	385.76 BD	22.00 B
PCB17	352.05 D	279.80 D	391.98 D	11.83
PCB18	73.07	112.31	164.49	17.21
PCB19	2767.71 BD	298.15 BD	184.41 BY	20.37 B
PCB21	ND U	ND U	ND U	ND U
PCB22	3.38	25.83	34.98	3.01
PCB24/27	837.09 D	73.43	80.24	7.26
PCB25	5.90	32.81	36.42	1.10
PCB26	63.47	67.22	86.19	2.85
PCB28	18.15	56.24	84.10	11.90
PCB29	3.83	0.63 J	0.81 J	0.07 J
PCB31	113.05	122.39	162.06	8.49
PCB33/20	6.38	20.81	31.43	2.34
PCB40	3.21	8.72	14.07	0.88
PCB41/64/71	49.19	115.30	178.27	8.69
PCB42	7.84	41.36	62.66	3.08
PCB43	ND U	ND U	ND U	ND U
PCB44	25.60	58.08	86.45	7.69
PCB45	38.46	19.12	26.30	1.75
PCB46	3.21	5.68	6.90	0.57 J
PCB47/75	321.11 D	88.35	137.07	5.48
PCB48	ND U	13.76	32.14	2.38
PCB49	225.36 Y	146.51 Y	217.42 Y	12.80
PCB51	649.66 D	52.99	62.93	4.91
PCB52	330.25 D	160.33 Y	231.77 Y	14.97
PCB53	705.38 D	93.57	120.79	8.17
PCB56/60	4.36	32.69	61.39	5.99
PCB59	15.41	8.23	13.32	0.72 J
PCB63	1.08	2.10	4.61	0.39 J
PCB66	17.42	59.45	97.90	7.87
PCB70/76	24.41	69.61	109.56	7.97
PCB74	18.87	69.07	117.74	5.98
PCB82	0.75 J	4.04	9.21	0.38 J
PCB83	3.00	2.75	5.10	0.46 J
PCB84	34.66	27.25	40.75	1.45
PCB85	16.32	6.68	14.21	1.04
PCB87/115	1.43	10.34	22.96	1.81
PCB89	46.13	27.66	43.62	1.94
PCB91	209.90 Y	35.96	51.21	1.51
PCB92	22.15	7.65	13.37	1.10
PCB95	372.09 D	86.52	123.02	ND U
PCB97	4.64	14.79	27.24	1.19
PCB99	49.67	46.57	80.95	1.94
PCB100	67.96	3.86	4.58	0.47 J
PCB101/90	51.63	29.42	53.39	1.95
PCB105	2.60	14.29	29.87	1.38
PCB107	7.78	3.77	6.39	0.28 J
PCB110	265.54 D	142.82 Y	214.71 Y	5.62
PCB114	0.81 J	0.86	1.75	0.11 J
PCB118	63.58	63.54	111.28	2.78
PCB119	21.85	3.12	3.71	0.24 J
PCB124	0.16 J	0.91	1.92	0.13 J
PCB128	7.26	10.37	19.87	0.36 J
PCB129	0.60 J	1.76	3.11	0.20 J
PCB130	5.75	3.65	6.36	ND U
PCB131	ND U	0.54 J	1.13	ND U
PCB132	17.78	18.17	33.97	0.80 J

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TLC

Client Reporting Sample ID:	T-L-C-17	T-L-C-18	T-L-C-19	T-L-C-20
Battelle Sample ID:	W2700	W2701	W2702	W2703
Extraction Batch ID:	01-203	01-203	01-203	01-203
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	40.48	36.58	38.08	33.02
Sample Dry Weight (g):	11.05	10.88	9.08	10.59
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
PCB134	8.84	3.09	5.06	ND U
PCB135/144	45.93	9.30	15.16	0.64 J
PCB136	59.06	10.94	16.37	0.61 J
PCB137	1.61	2.36	4.65	ND U
PCB138/160/163	152.87 Y	59.34	107.41	3.30
PCB141	1.73	4.06	8.80	0.39 J
PCB146	55.58	6.98	11.82	0.56 J
PCB149	172.19 Y	59.90	95.07	2.03
PCB151	35.65	8.98	14.49	0.78 J
PCB153	145.14	44.31	80.01	2.09
PCB156	4.14	5.35	11.06	0.29 J
PCB158	2.65	4.37	8.94	0.27 J
PCB167	1.80	2.22	3.47	0.15 J
PCB169	ND U	ND U	ND U	ND U
PCB170/190	19.05	10.91	18.18	0.51 J
PCB171	5.41	2.45	4.64	0.33 J
PCB172	1.41	0.54 J	0.94 J	ND U
PCB173	0.26 J	0.23 J	0.42 J	ND U
PCB174	10.63	6.59	12.74	0.38 J
PCB175	0.67 J	0.36 J	0.66 J	ND U
PCB176	3.00	1.09	1.98	ND U
PCB177	26.88	6.00	10.62	0.39 J
PCB178	21.02	2.26	3.75	0.12 J
PCB180	26.46	14.52	28.20	0.67 J
PCB183	6.02	3.89	7.42	0.22 J
PCB184	0.15 J	ND U	ND U	ND U
PCB185	0.46 J	0.57 J	1.13	ND U
PCB187/182	60.94	10.20	17.45	0.92 J
PCB189	1.57	0.46 J	0.81 J	ND U
PCB191	0.67 J	0.28 J	0.53 J	ND U
PCB193	5.80	0.84	1.81	ND U
PCB194	12.28	2.85	5.48	ND U
PCB195	4.33	1.23	2.39	ND U
PCB197	0.72 J	0.23 J	0.28 J	ND U
PCB198	0.66 J	0.32 J	0.59 J	ND U
PCB199	16.74	3.80	7.44	0.25 J
PCB200	1.30	0.50 J	0.92 J	ND U
PCB201	2.77	0.55 J	1.02	ND U
PCB203/196	10.67	3.44	7.01	0.24 J
PCB205	0.70	0.29 J	0.30 J	ND U
PCB206	14.13	3.31	6.49	0.30 J
PCB207	1.76	0.37 J	0.80	ND U
PCB209	4.33	1.08	2.01	ND U
Surrogate Recovery (%)				
PCB104	75	55	66	55
PCB14	57	51	58	56
PCB34	123	57	67	48
PCB112	82	68	79	47

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-L-C-17	T-L-C-18	T-L-C-19	T-L-C-20
Cl 1	2162.98	649.45	373.83	21.62
Cl 2	11507.61	2907.25	2243.32	125.67
Cl 3	6092.86	1389.61	1642.87	108.44
Cl 4	2440.83	1044.91	1581.30	100.29
Cl 5	1242.65	532.82	859.26	25.80
Cl 6	718.57	255.68	446.75	12.47
Cl 7	190.39	61.19	111.29	3.54
Cl 8	50.17	13.22	25.41	0.49
Cl 9	15.89	3.69	7.30	0.30
Cl 10	4.33	1.08	2.01	0.00
SUM PCB	24431.85	6861.41	7295.39	401.07

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TOA

Client Reporting Sample ID:	T-O-A-1	T-O-A-2	T-O-A-3	T-O-A-4
Battelle Sample ID:	W2609	W2610	W2611	W2612
Extraction Batch ID:	01-204	01-204	01-204	01-204
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	63.06	58.96	56.49	58.77
Sample Dry Weight (g):	5.56	7.63	7.72	7.09
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.74 J	0.69 J	0.63 J	0.72 J
PCB1	25.28	28.48	21.59	19.63
PCB3	6.49	6.13	11.54	3.64
PCB4/10	195.75	189.42	146.40	115.71
PCB6	5.82	4.77	6.55	3.37
PCB7/9	1.73	1.28	1.74	0.99 J
PCB8/5	52.08	40.63	58.44	30.04
PCB12/13	1.43 J	1.03 J	2.91	0.97 J
PCB16/32	103.45	78.47	98.14	66.66
PCB17	47.35	35.34	46.91	29.11
PCB18	28.07	20.87	25.79	17.98
PCB19	116.08	98.74	98.60	71.14
PCB21	ND U	ND U	ND U	ND U
PCB22	7.78	5.74	9.46	5.97
PCB24/27	44.09	34.86	41.14	25.81
PCB25	6.41	4.69	7.62	4.46
PCB26	18.34	13.42	21.64	12.10
PCB28	41.69	29.95	50.55	30.74
PCB29	ND U	0.27 J	0.32 J	ND U
PCB31	35.91	26.22	42.80	25.05
PCB33/20	8.39	5.25	8.29	5.26
PCB40	7.48	5.39	7.71	5.85
PCB41/64/71	58.40	45.22	64.82	45.15
PCB42	20.11	15.38	22.01	15.88
PCB43	ND U	ND U	ND U	ND U
PCB44	44.11	33.91	49.48	35.89
PCB45	10.48	7.72	10.17	7.91
PCB46	3.76	2.91	3.75	2.79
PCB47/75	71.90	50.77	70.48	49.79
PCB48	6.36	5.50	6.23	4.62
PCB49	80.34	61.23	84.68	59.12
PCB51	37.88	28.79	33.66	23.51
PCB52	92.35	70.49	97.65	68.15
PCB53	54.79	40.67	50.56	34.87
PCB56/60	40.81	30.21	51.94	33.94
PCB59	6.35	4.60	6.82	4.51
PCB63	5.20	3.58	5.44	3.51
PCB66	72.84	53.44	91.67	59.27
PCB70/76	54.98	40.01	69.01	45.08
PCB74	45.87	33.40	56.97	35.71
PCB82	9.28	7.14	10.65	7.41
PCB83	5.80	3.92	5.64	3.94
PCB84	19.21	13.50	19.15	14.51
PCB85	15.77	11.25	16.83	12.23
PCB87/115	30.49	21.72	32.97	23.70
PCB89	39.08	25.61	41.06	27.71
PCB91	23.12	16.01	21.40	15.68
PCB92	19.08	13.06	19.05	13.31
PCB95	67.75	48.45	68.74	48.78
PCB97	22.81	16.01	24.15	17.86
PCB99	47.54	32.21	47.59	34.85
PCB100	3.64	2.58	3.31	2.30
PCB101/90	38.21	30.01	41.31	31.41
PCB105	27.38	20.03	34.34	22.97
PCB107	7.55	4.99	8.19	5.27
PCB110	117.49	82.75	123.94	87.05
PCB114	1.80	1.39	2.23	1.53
PCB118	77.78	54.58	91.07	60.51
PCB119	5.36	3.52	4.68	3.59
PCB124	2.00	1.65	2.39	1.72
PCB128	14.25	10.36	15.61	11.85
PCB129	2.79	2.14	3.16	2.39

Client Reporting Sample ID:	T-O-A-1	T-O-A-2	T-O-A-3	T-O-A-4
PCB130	5.36	3.77	5.38	3.97
PCB131	0.93 J	0.65 J	0.96 J	0.70 J
PCB132	23.41	16.26	24.22	17.78
PCB134	4.66	3.17	4.97	3.51
PCB135/144	13.23	9.07	12.57	8.97
PCB136	9.29	6.28	8.52	6.25
PCB137	3.89	2.89	4.17	3.22
PCB138/160/163	88.45	63.05	94.64	68.63
PCB141	8.06	5.91	9.01	6.71
PCB146	13.28	9.00	12.88	9.25
PCB149	51.94	35.14	50.13	36.46
PCB151	13.16	9.17	12.85	9.42
PCB153	59.53	41.77	60.59	44.69
PCB156	7.89	5.79	9.50	6.33
PCB158	6.34	4.56	7.01	5.25
PCB167	3.21	2.19	3.77	2.40
PCB169	ND U	ND U	ND U	ND U
PCB170/190	9.38	6.27	9.71	6.90
PCB171	2.40	1.84	2.59	1.83
PCB172	0.66 J	0.35 J	0.62 J	0.50 J
PCB173	ND U	ND U	ND U	ND U
PCB174	6.37	4.62	6.71	4.93
PCB175	ND U	ND U	0.28 J	ND U
PCB176	0.93 J	0.72 J	1.01 J	0.69 J
PCB177	5.82	3.94	5.94	4.08
PCB178	2.12	1.54	2.04	1.47
PCB180	12.42	8.89	13.61	9.41
PCB183	3.42	2.31	3.36	2.50
PCB184	ND U	ND U	ND U	ND U
PCB185	0.51 J	0.33 J	0.55 J	0.46 J
PCB187/182	9.22	6.39	8.50	6.19
PCB189	0.64 J	0.52 J	0.91 J	0.60 J
PCB191	0.33 J	0.30 J	0.41 J	ND U
PCB193	0.85 J	0.61 J	0.94 J	0.53 J
PCB194	1.70 J	1.46	1.94	1.39 J
PCB195	0.97 J	0.72 J	1.01	0.64 J
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	2.54	1.47	2.21	1.83
PCB200	0.27 J	0.29 J	0.28 J	ND U
PCB201	ND U	0.33 J	0.49 J	0.35 J
PCB203/196	2.00	1.25 J	1.91	1.32 J
PCB205	ND U	ND U	ND U	ND U
PCB206	1.29 J	0.90 J	1.36	0.96 J
PCB207	0.21 J	0.12 J	0.16 J	ND U
PCB209	0.44 J	0.28 J	0.49 J	0.32 J
	2435.51	1845.79	2509.12	1735.19
			2263.47	
Surrogate Recovery (%)				
PCB104	66	67	66	56
PCB14	53	57	51	46
PCB34	59	62	60	51
PCB112	76	74	77	63

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this analyte.

LOC	T-O-A-1	T-O-A-2	T-O-A-3	T-O-A-4
Cl 1	31.77	34.61	33.13	23.27
Cl 2	256.82	237.13	216.04	151.07
Cl 3	457.56	353.82	451.25	294.27
Cl 4	714.03	533.23	783.04	535.55
Cl 5	581.14	410.37	618.69	436.34
Cl 6	329.70	231.16	339.94	247.77
Cl 7	55.07	38.65	57.19	40.11
Cl 8	7.48	5.53	7.84	5.54
Cl 9	1.50	1.02	1.52	0.96
Cl 10	0.44	0.28	0.49	0.32
SUM PCB	2435.51	1845.79	2509.12	1735.19

Battelle
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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TOA

Client Reporting Sample ID:	T-O-A-5	T-O-A-6	T-O-A-7	T-O-A-8
Battelle Sample ID:	W2613	W2614	W2615	W2616
Extraction Batch ID:	01-204	01-204	01-204	01-204
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	59.22	46.30	39.86	82.93
Sample Dry Weight (g):	6.91	8.75	10.01	2.91
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.61 J	0.41 J	0.60 J	5.91
PCB1	11.57	14.02	61.34	556.22
PCB3	13.14	8.15	28.65	232.32
PCB4/10	83.86	103.80	358.20 Y	2211.44 D
PCB6	6.16	6.02	19.34	86.63
PCB7/9	1.66	1.58	4.96	24.36
PCB8/5	65.89	68.53	251.78 Y	1002.11 Y
PCB12/13	2.84	1.11	3.82	15.67
PCB16/32	81.91	136.29	353.45 Y	997.50 Y
PCB17	53.05	62.28	178.88	586.80
PCB18	25.03	28.04	81.94	324.28
PCB19	60.32	90.53	252.73 Y	1001.83 Y
PCB21	ND U	ND U	ND U	ND U
PCB22	9.66	5.04	4.60	20.76
PCB24/27	32.90	52.49	141.17	462.85
PCB25	7.82	6.62	16.10	58.43
PCB26	19.72	18.50	45.24	182.59
PCB28	55.37	29.34	31.41	121.79
PCB29	0.35 J	0.41 J	0.59 J	1.93 J
PCB31	44.13	34.68	80.10	314.74
PCB33/20	9.61	6.55	7.15	21.63
PCB40	6.50	5.47	4.89	15.42
PCB41/64/71	55.41	51.22	64.91	231.73
PCB42	19.70	16.75	18.38	56.32
PCB43	ND U	ND U	ND U	ND U
PCB44	40.22	34.62	35.20	110.51
PCB45	8.10	8.54	12.32	34.56
PCB46	2.79	2.55	3.02	10.36
PCB47/75	66.20	90.30	174.17	516.06
PCB48	5.10	ND U	ND U	ND U
PCB49	77.72	97.35	200.51	649.85
PCB51	28.70	52.87	124.72	374.04
PCB52	85.79	103.70	203.69	680.28
PCB53	46.08	83.29	203.26	625.82
PCB56/60	44.25	27.50	16.04	80.76
PCB59	5.20	4.93	7.15	21.55
PCB63	5.13	4.68	5.90	14.48
PCB66	79.77	53.98	44.11	177.86
PCB70/76	57.89	38.94	39.05	162.01
PCB74	51.58	36.05	31.74	127.60
PCB82	8.62	6.46	4.24	17.62
PCB83	5.01	5.08	6.23	15.87
PCB84	16.71	18.54	25.07	77.96
PCB85	14.15	12.22	9.99	35.89
PCB87/115	26.33	20.89	12.47	59.87
PCB89	33.54	30.30	30.56	93.30
PCB91	20.45	29.64	49.50	128.45
PCB92	17.04	20.95	30.61	71.97
PCB95	60.92	78.66	134.26	411.04
PCB97	20.54	16.45	10.55	41.31
PCB99	41.81	43.06	42.77	122.75
PCB100	3.22	5.34	10.47	29.24
PCB101/90	36.22	38.42	35.58	107.56
PCB105	28.30	19.54	11.79	58.69
PCB107	7.42	7.62	9.89	27.32
PCB110	110.81	124.80	171.99	509.80
PCB114	2.00	1.37	1.01	4.04
PCB118	78.81	65.37	62.51	233.54
PCB119	4.87	7.20	12.04	27.97
PCB124	2.18	1.42	0.66 J	3.86
PCB128	13.42	12.10	10.67	34.42
PCB129	2.72	2.09	1.28	5.62

Client Reporting Sample ID:	T-O-A-5	T-O-A-6	T-O-A-7	T-O-A-8
PCB130	4.99	5.27	6.68	18.44
PCB131	0.84 J	0.70 J	0.48 J	1.87 J
PCB132	21.33	21.85	22.16	66.05
PCB134	4.18	5.05	7.43	19.55
PCB135/144	12.03	15.60	24.48	61.99
PCB136	8.60	10.77	16.69	47.33
PCB137	3.57	3.07	2.51	9.22
PCB138/160/163	83.76	84.96	96.45	296.74
PCB141	7.45	6.25	4.25	16.89
PCB146	12.78	16.51	23.82	58.21
PCB149	46.23	56.98	69.81	183.70
PCB151	12.47	16.67	26.53	69.19
PCB153	56.20	63.56	78.62	222.54
PCB156	7.50	6.26	5.56	20.50
PCB158	5.97	4.96	4.06	15.18
PCB167	2.95	2.56	2.45	8.91
PCB169	ND U	ND U	ND U	ND U
PCB170/190	8.00	9.33	10.76	32.31
PCB171	2.42	2.58	3.34	9.16
PCB172	0.52 J	0.57 J	0.70 J	2.09 J
PCB173	ND U	ND U	ND U	0.83 J
PCB174	6.07	6.73	8.01	22.63
PCB175	ND U	0.33 J	0.40 J	1.17 J
PCB176	0.99 J	1.18	1.58	4.39
PCB177	5.31	7.35	10.52	28.42
PCB178	2.08	3.15	5.21	14.02
PCB180	11.93	13.25	16.94	48.51
PCB183	3.08	3.34	4.23	12.74
PCB184	ND U	ND U	ND U	ND U
PCB185	0.65 J	0.50 J	0.40 J	1.55 J
PCB187/182	8.74	11.71	17.73	46.31
PCB189	0.58 J	0.62 J	0.69 J	2.44 J
PCB191	0.33 J	0.33 J	0.40 J	1.25 J
PCB193	0.81 J	1.11	1.54	4.32
PCB194	1.78	2.00	3.23	8.77
PCB195	1.04 J	0.94	1.34	3.78
PCB197	ND U	ND U	0.22 J	0.87 J
PCB198	ND U	ND U	ND U	ND U
PCB199	2.42	3.08	4.36	10.91
PCB200	0.34 J	0.43 J	0.52 J	1.45 J
PCB201	0.42 J	0.44 J	0.70 J	1.82 J
PCB203/196	1.68	2.15	3.15	8.74
PCB205	ND U	ND U	ND U	ND U
PCB206	1.24	1.38	2.12	5.48
PCB207	ND U	0.17 J	0.26 J	0.84 J
PCB209	0.35 J	0.38 J	0.52 J	1.73 J
	2177.83	2348.32	4285.46	15624.00

Surrogate Recovery (%)			5234.16	
PCB104	59	60	63	58
PCB14	46	43	47	45
PCB34	54	55	65	58
PCB112	69	72	69	66

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this analyte.

LOC	T-O-A-5	T-O-A-6	T-O-A-7	T-O-A-8
Cl 1	24.72	22.17	89.99	788.54
Cl 2	160.41	181.04	638.09	3340.21
Cl 3	399.88	470.78	1193.35	4095.12
Cl 4	686.13	712.74	1189.06	3889.20
Cl 5	538.95	553.35	672.20	2078.05
Cl 6	306.97	335.20	403.92	1156.35
Cl 7	51.52	62.08	82.45	232.13
Cl 8	7.66	9.04	13.51	36.35
Cl 9	1.24	1.55	2.38	6.32
Cl 10	0.35	0.38	0.52	1.73
SUM PCB	2177.83	2348.32	4285.46	15624.00

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TOA

Client Reporting Sample ID:	T-O-A-9	T-O-A-10	T-O-A-11	T-O-A-12
Battelle Sample ID:	W2617	W2618	W2619	W2620
Extraction Batch ID:	01-204	01-204	01-204	01-204
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	40.20	36.57	48.26	53.61
Sample Dry Weight (g):	10.43	10.87	8.31	7.79
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.31 J	1.10 J	4.33	0.36 J
PCB1	17.09	165.68	764.53 D	2.41
PCB3	8.18	82.50	351.79 Y	0.89 J
PCB4/10	117.44	700.21 D	3276.89 DY	9.17
PCB6	5.70	35.01	111.40	0.30 J
PCB7/9	1.55	9.05	34.32	ND U
PCB8/5	62.88	395.46 Y	953.10 D	2.07
PCB12/13	0.78 J	5.41	13.75	ND U
PCB16/32	114.59	451.59 Y	1308.20 D	2.21
PCB17	51.09	263.05 Y	582.66 D	1.30
PCB18	24.90	122.83	373.65 Y	0.81 J
PCB19	89.15	379.79 Y	1459.47 D	2.72
PCB21	ND U	ND U	ND U	ND U
PCB22	3.23	6.61	5.86	ND U
PCB24/27	48.78	202.62	764.05 D	1.16
PCB25	5.54	27.12	70.09	0.13 J
PCB26	16.72	76.23	255.51	0.40 J
PCB28	19.78	40.38	33.48	0.45 J
PCB29	0.28 J	0.75 J	3.10	ND U
PCB31	28.04	126.08	310.31	0.68 J
PCB33/20	4.49	8.30	8.21	ND U
PCB40	3.06	5.43	3.61	ND U
PCB41/64/71	35.63	84.02	171.44	0.72 J
PCB42	10.81	22.86	12.74	ND U
PCB43	ND U	ND U	ND U	ND U
PCB44	21.67	40.58	31.50	0.53 J
PCB45	5.76	14.74	26.86	ND U
PCB46	1.69	3.74	7.61	ND U
PCB47/75	68.53	218.50	504.61 Y	0.69 J
PCB48	ND U	ND U	ND U	ND U
PCB49	75.21	262.76 Y	645.27 Y	1.32
PCB51	47.12	159.34	625.75 Y	0.78 J
PCB52	83.11	274.10 Y	777.81 D	1.44
PCB53	72.46	263.47 Y	893.89 D	1.29
PCB56/60	16.69	18.59	12.72	0.44 J
PCB59	3.22	8.40	16.35	ND U
PCB63	3.18	6.07	3.93	ND U
PCB66	35.25	50.54	46.68	0.81 J
PCB70/76	25.10	48.75	63.04	0.65 J
PCB74	23.55	42.52	22.87	0.40 J
PCB82	4.27	4.21	2.59	ND U
PCB83	3.38	6.30	5.56	ND U
PCB84	12.48	30.97	41.09	ND U
PCB85	7.89	11.48	13.25	ND U
PCB87/115	12.40	13.32	10.03	0.24 J
PCB89	19.47	35.41	25.39	ND U
PCB91	20.98	59.48	78.80	0.26 J
PCB92	14.42	32.52	37.16	ND U
PCB95	58.95	165.16	438.87 Y	0.66 J
PCB97	10.13	10.70	5.13	ND U
PCB99	28.61	46.58	19.96	0.36 J
PCB100	4.24	12.34	42.68	ND U
PCB101/90	25.18	36.84	20.85	0.66 J
PCB105	12.49	13.50	11.83	ND U
PCB107	5.27	10.92	13.74	ND U
PCB110	86.51	204.11	320.61	0.85 J
PCB114	0.89	1.09	1.18	ND U
PCB118	43.02	76.15	64.06	0.42 J
PCB119	5.08	12.45	18.70	ND U
PCB124	0.89	0.76 J	0.45 J	ND U
PCB128	7.44	11.53	8.75	ND U
PCB129	1.35	1.54	1.02 J	ND U

Client Reporting Sample ID:	T-O-A-9	T-O-A-10	T-O-A-11	T-O-A-12
PCB130	3.43	7.07	7.57	ND U
PCB131	0.39 J	0.51 J	0.33 J	ND U
PCB132	14.48	24.01	16.86	0.15 J
PCB134	3.29	7.37	9.54	ND U
PCB135/144	10.80	26.66	32.49	ND U
PCB136	7.51	19.58	31.10	ND U
PCB137	2.07	2.81	1.87	ND U
PCB138/160/163	58.04	105.39	172.63	0.65 J
PCB141	3.85	4.63	2.94	ND U
PCB146	11.32	25.10	26.24	ND U
PCB149	37.96	75.22	50.18	0.35 J
PCB151	11.64	29.32	51.75	ND U
PCB153	42.94	86.17	71.17	0.45 J
PCB156	3.89	6.50	5.23	ND U
PCB158	3.25	4.57	3.43	ND U
PCB167	1.61	2.81	2.31	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	6.09	12.99	17.96	ND U
PCB171	1.76	3.90	4.24	ND U
PCB172	0.39 J	0.77 J	1.15	ND U
PCB173	ND U	ND U	0.36 J	ND U
PCB174	4.33	8.75	8.69	ND U
PCB175	ND U	0.43 J	0.59 J	ND U
PCB176	0.85 J	1.76	2.07	ND U
PCB177	4.83	11.50	16.58	ND U
PCB178	2.33	5.35	16.70	ND U
PCB180	8.86	18.72	22.76	ND U
PCB183	2.22	4.36	5.35	ND U
PCB184	ND U	ND U	0.20 J	ND U
PCB185	0.32 J	0.54 J	0.46 J	ND U
PCB187/182	8.11	18.73	28.81	0.28 J
PCB189	0.48 J	0.85	1.46	ND U
PCB191	0.20 J	0.43 J	0.63 J	ND U
PCB193	0.76 J	1.63	2.75	ND U
PCB194	1.44	3.32	7.21	ND U
PCB195	0.70 J	1.44	2.88	ND U
PCB197	ND U	0.24 J	0.68 J	ND U
PCB198	ND U	ND U	0.62 J	ND U
PCB199	1.99	4.64	9.59	ND U
PCB200	0.33 J	0.55 J	0.96 J	ND U
PCB201	0.36 J	0.77 J	1.57	ND U
PCB203/196	1.75	3.53	6.97	ND U
PCB205	ND U	ND U	0.46 J	ND U
PCB206	1.07	2.22	6.27	ND U
PCB207	0.16 J	0.30 J	0.82	ND U
PCB209	0.37 J	0.60 J	1.72	ND U
	1803.78	5956.46	16384.88	39.12

Surrogate Recovery (%)				
PCB104	55	65	76	49
PCB14	38 &	50	46	41
PCB34	50	75	84	43
PCB112	61	72	70	55

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this analyte.

LOC	T-O-A-9	T-O-A-10	T-O-A-11	T-O-A-12
Cl 1	25.26	248.19	1116.32	3.30
Cl 2	188.35	1145.14	4389.46	11.55
Cl 3	406.60	1705.34	5174.59	9.86
Cl 4	532.04	1524.41	3866.67	9.07
Cl 5	376.54	784.27	1171.93	3.45
Cl 6	225.26	440.78	495.40	1.60
Cl 7	41.54	90.71	130.76	0.28
Cl 8	6.57	14.50	30.92	0.00
Cl 9	1.24	2.52	7.10	0.00
Cl 10	0.37	0.60	1.72	0.00
SUM PCB	1803.78	5956.46	16384.88	39.12

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TOA

Client Reporting Sample ID:	T-O-A-13	T-O-A-14	T-O-A-15	T-O-A-16
Battelle Sample ID:	W2621	W2622	W2623	W2624
Extraction Batch ID:	01-204	01-204	01-204	01-204
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	42.91	36.77	46.51	37.27
Sample Dry Weight (g):	9.29	10.67	9.06	11.22
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.38 J	1.71	3.83	2.86
PCB1	19.05	381.63 Y	512.66 Y	319.14 Y
PCB3	10.40	109.77	229.60	176.36
PCB4/10	134.61	1661.89 DY	2160.39 DY	1650.47 D
PCB6	8.28	49.40	75.71	65.09
PCB7/9	2.24	14.48	22.17	17.87
PCB8/5	93.86	511.22 Y	714.40 D	623.74 D
PCB12/13	1.07	4.02	10.95	10.47
PCB16/32	186.03	718.29 D	887.71 D	729.84 D
PCB17	78.60	342.10 Y	477.70 Y	436.22 Y
PCB18	32.59	183.48	244.94	225.80
PCB19	114.52	701.23 D	878.63 D	727.19 D
PCB21	ND U	ND U	ND U	ND U
PCB22	4.44	3.70	7.59	14.18
PCB24/27	65.47	353.19 Y	472.37 Y	385.44 Y
PCB25	8.15	30.58	46.26	47.30
PCB26	22.03	100.91	159.41	144.26
PCB28	29.34	23.08	44.87	60.94
PCB29	0.31 J	1.20	1.78	1.60
PCB31	38.89	139.53	211.36	190.51
PCB33/20	6.02	5.21	7.36	8.21
PCB40	4.21	3.15	5.84	5.46
PCB41/64/71	47.39	96.90	137.33	122.48
PCB42	14.99	15.24	20.60	20.87
PCB43	ND U	ND U	ND U	ND U
PCB44	30.85	26.44	42.85	36.04
PCB45	8.83	15.31	21.36	18.41
PCB46	2.46	3.51	5.78	4.70
PCB47/75	102.83	257.96	341.13 Y	275.36 Y
PCB48	ND U	ND U	ND U	ND U
PCB49	106.80	317.15 Y	413.73 Y	347.31 Y
PCB51	63.23	269.09	351.89 Y	292.03 Y
PCB52	110.12	364.04 Y	505.63 Y	439.86 Y
PCB53	95.74	408.32 Y	552.30 Y	450.84 Y
PCB56/60	20.22	9.59	23.95	23.04
PCB59	4.83	8.33	12.24	10.22
PCB63	5.09	3.69	5.97	3.66
PCB66	45.31	30.63	58.90	53.11
PCB70/76	33.68	36.39	61.38	55.52
PCB74	31.92	26.12	41.94	38.76
PCB82	5.30	2.75	5.59	4.00
PCB83	5.15	4.53	6.43	4.10
PCB84	17.60	29.19	36.61	27.92
PCB85	10.67	9.08	14.61	10.25
PCB87/115	16.52	10.21	19.29	12.59
PCB89	31.77	27.12	36.95	22.84
PCB91	33.43	58.58	64.45	48.41
PCB92	22.83	26.20	35.02	23.89
PCB95	80.98	200.26	269.39	220.16
PCB97	13.13	6.70	12.87	8.32
PCB99	42.33	31.68	40.09	25.13
PCB100	5.76	17.64	23.63	19.78
PCB101/90	36.99	29.15	35.67	23.92
PCB105	15.32	9.65	19.67	12.90
PCB107	7.71	8.40	12.52	8.58
PCB110	127.26	190.74	254.04	194.26
PCB114	1.00	0.75 J	1.59	1.07
PCB118	59.65	55.11	79.42	55.22
PCB119	8.20	11.35	14.65	10.58
PCB124	0.97 J	0.48 J	1.19	0.63 J
PCB128	10.99	8.64	12.10	7.82
PCB129	1.89	1.49	2.32	1.01

Client Reporting Sample ID:	T-O-A-13	T-O-A-14	T-O-A-15	T-O-A-16
PCB130	5.25	6.09	7.44	5.30
PCB131	0.59 J	0.43 J	0.66 J	0.49 J
PCB132	21.17	18.82	23.87	14.74
PCB134	5.04	6.56	8.67	5.82
PCB135/144	17.06	24.05	26.88	19.97
PCB136	11.20	20.10	22.79	17.86
PCB137	2.64	2.05	2.92	1.72
PCB138/160/163	82.83	101.39	137.54	102.25
PCB141	5.23	3.18	5.23	3.43
PCB146	18.35	20.76	24.27	16.53
PCB149	59.62	58.79	64.80	43.66
PCB151	17.97	29.66	36.19	28.07
PCB153	67.40	69.62	78.05	52.94
PCB156	5.94	5.21	6.83	4.47
PCB158	4.40	3.54	5.24	3.46
PCB167	2.03	2.33	2.76	2.03
PCB169	ND U	ND U	ND U	ND U
PCB170/190	10.73	12.78	15.59	9.37
PCB171	2.79	3.37	3.68	2.68
PCB172	0.71 J	0.78 J	0.84 J	0.65 J
PCB173	0.28 J	0.31 J	0.31 J	0.24 J
PCB174	6.84	6.94	8.33	5.87
PCB175	0.46 J	0.44 J	0.53 J	0.36 J
PCB176	1.40	1.56	1.75	1.26
PCB177	7.94	11.16	12.96	9.90
PCB178	3.17	7.12	9.57	8.05
PCB180	13.50	15.93	19.38	14.34
PCB183	3.37	4.17	4.90	3.60
PCB184	0.09 J	0.11 J	0.19 J	ND U
PCB185	0.43 J	0.50 J	0.58 J	0.44 J
PCB187/182	12.44	18.28	21.72	16.62
PCB189	0.71 J	0.95	1.05	0.81
PCB191	0.35 J	0.39 J	0.46 J	0.39 J
PCB193	1.03	1.66	1.93	1.52
PCB194	2.44	3.86	4.80	3.77
PCB195	1.10	1.38	1.94	1.60
PCB197	0.29 J	0.30 J	0.30 J	0.27 J
PCB198	0.39 J	0.31 J	0.58 J	0.38 J
PCB199	2.89	4.90	6.10	5.30
PCB200	0.36 J	0.63 J	0.84 J	0.54 J
PCB201	0.53 J	0.84 J	0.96 J	0.79 J
PCB203/196	2.25	3.45	4.48	3.98
PCB205	ND U	0.36 J	0.42 J	ND U
PCB206	1.69	2.62	3.52	3.11
PCB207	0.19 J	0.40 J	0.54 J	0.48 J
PCB209	0.41 J	0.66 J	1.09	0.87
	2545.37	8445.17	11350.26	9195.69
Surrogate Recovery (%)				
PCB104	49	64	71	66
PCB14	39 &	48	53	44
PCB34	50	70	80	72
PCB112	54	64	70	64

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this analyte.

LOC	T-O-A-13	T-O-A-14	T-O-A-15	T-O-A-16
Cl 1	29.45	491.39	742.26	495.50
Cl 2	240.06	2241.00	2983.63	2367.64
Cl 3	586.39	2602.50	3439.97	2971.50
Cl 4	728.52	1891.84	2602.83	2197.68
Cl 5	542.58	729.58	983.68	734.59
Cl 6	339.60	382.71	468.55	331.57
Cl 7	66.24	86.45	103.78	76.10
Cl 8	10.25	16.02	20.42	16.64
Cl 9	1.87	3.02	4.06	3.59
Cl 10	0.41	0.66	1.09	0.87
SUM PCB	2545.37	8445.17	11350.26	9195.69

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TOA

Client Reporting Sample ID:	T-O-A-17	T-O-A-18	T-O-A-19	T-O-A-20
Battelle Sample ID:	W2625-1	W2626	W2627	W2628
Extraction Batch ID:	01-480	01-204	01-204	01-204
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	31.20	29.94	27.22	23.92
Sample Dry Weight (g):	10.46	11.92	11.81	12.27
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	7.42	1.26 J	0.44 J	0.83 J
PCB1	164.14 Y	18.80	0.62 J	1.80
PCB3	51.19	3.69	0.51 J	1.00
PCB4/10	1631.07 D	364.16 Y	4.08	15.03
PCB6	69.57	11.98	0.73 J	0.88
PCB7/9	14.68	5.23	0.22 J	0.25 J
PCB8/5	930.51 D	192.49	6.47	8.08
PCB12/13	18.20	4.42	0.77	0.26 J
PCB16/32	351.06 D	143.02	8.19	17.98
PCB17	570.42 D	259.34	7.73	8.21
PCB18	233.25 Y	221.84	21.61	4.90
PCB19	200.21 Y	61.05	1.82	13.62
PCB21	ND U	ND U	ND U	ND U
PCB22	115.18	139.86	18.94	1.70
PCB24/27	88.03	35.23	1.67	7.05
PCB25	66.46	33.18	3.01	1.12
PCB26	108.92	48.64	6.92	3.23
PCB28	821.50 D	917.17 D	78.03	8.48
PCB29	1.40	1.39	0.20 J	0.08 J
PCB31	419.89 D	272.79 Y	33.70	7.23
PCB33/20	50.06	85.17	10.07	1.99
PCB40	5.54	48.21	4.75	1.49
PCB41/64/71	356.10 D	378.49 Y	42.79	12.22
PCB42	94.26	121.96	12.48	4.20
PCB43	ND U	ND U	ND U	ND U
PCB44	186.24 Y	321.27	36.48	8.81
PCB45	49.17	49.31	4.38	1.97
PCB46	8.52	12.74	1.30	0.70 J
PCB47/75	161.27 Y	124.08	9.34	14.87
PCB48	81.54	99.04	10.12	1.45
PCB49	299.18 Y	301.14 Y	38.23	17.58
PCB51	35.77	14.34	1.30	7.43
PCB52	366.11 D	366.46 Y	48.72	19.46
PCB53	72.47	45.01	4.55	11.11
PCB56/60	244.54 Y	337.62 Y	47.27	8.74
PCB59	29.51	32.98	3.78	1.09
PCB63	16.58	20.55	2.67	1.03
PCB66	332.87 D	539.15 Y	67.79	15.63
PCB70/76	299.37 Y	411.43 Y	60.22	11.46
PCB74	317.81 Y	321.11 Y	38.57	10.27
PCB82	21.94	28.51	3.53	1.95
PCB83	8.81	11.07	1.66	1.10
PCB84	46.11	46.50	5.24	4.01
PCB85	30.70	39.97	5.15	3.25
PCB87/115	68.99	89.05	11.56	6.11
PCB89	ND U	84.25	11.45	7.99
PCB91	34.60	27.30	3.27	4.93
PCB92	26.16	29.61	3.72	4.17
PCB95	137.84	125.12	14.15	14.48
PCB97	49.29	63.68	7.77	4.51
PCB99	97.79	86.78	9.98	9.51
PCB100	1.31	0.65 J	ND U	0.90
PCB101/90	162.81	88.39	9.06	7.90
PCB105	61.88	72.61	9.60	5.52
PCB107	9.04	11.11	1.52	1.59
PCB110	217.68 Y	196.68	24.18	24.21
PCB114	3.36	4.53	0.78	0.49 J
PCB118	162.99	149.38	19.15	15.78
PCB119	2.94	3.39	0.69 J	1.17
PCB124	3.50	4.42	0.63 J	0.58 J
PCB128	22.82	19.05	2.30	2.88
PCB129	4.38	4.40	0.55 J	0.58 J

Client Reporting Sample ID:	T-O-A-17	T-O-A-18	T-O-A-19	T-O-A-20	
PCB130	5.39	5.87	0.78	1.13	
PCB131	1.26	1.39	ND U	0.22	J
PCB132	34.31	33.80	4.01	4.45	
PCB134	4.98	5.11	0.65 J	0.95	
PCB135/144	14.10	13.75	1.89	2.80	
PCB136	13.05	11.26	1.34	2.14	
PCB137	5.14	5.41	0.77 J	0.91	
PCB138/160/163	130.12	115.97	13.82	18.43	
PCB141	14.65	16.64	2.02	1.70	
PCB146	10.42	11.02	1.53	2.89	
PCB149	76.88	62.00	7.19	10.67	
PCB151	16.73	15.36	2.12	2.78	
PCB153	79.59	71.20	8.91	12.71	
PCB156	9.95	9.20	1.24	1.48	
PCB158	9.73	9.05	1.19	1.33	
PCB167	3.94	3.32	0.47 J	0.67	J
PCB169	ND U	ND U	ND U	ND	U
PCB170/190	15.60	12.36	1.81	2.32	
PCB171	4.03	3.55	0.48 J	0.58	J
PCB172	0.77 J	0.82	0.15 J	0.13	J
PCB173	0.40 J	0.39 J	ND U	ND	U
PCB174	14.57	13.49	1.69	1.40	
PCB175	0.47 J	0.55 J	ND U	0.13	J
PCB176	1.35	1.51	0.22 J	0.28	J
PCB177	8.40	7.74	1.05	1.32	
PCB178	2.20	2.18	0.38 J	0.51	J
PCB180	24.50	25.41	2.97	2.73	
PCB183	6.42	6.37	0.78 J	0.74	J
PCB184	ND U	ND U	ND U	ND	U
PCB185	1.40	1.36	0.30 J	0.23	J
PCB187/182	12.91	12.90	1.69	1.91	
PCB189	0.49 J	0.42 J	ND U	0.21	J
PCB191	0.41 J	0.44 J	ND U	ND	U
PCB193	1.21	1.13	0.22 J	0.16	J
PCB194	3.65	3.73	0.66 J	0.55	J
PCB195	1.84	1.72	0.36 J	0.27	J
PCB197	0.17 J	0.17 J	ND U	ND	U
PCB198	0.28 J	0.29 J	ND U	ND	U
PCB199	5.15	5.50	0.88	0.60	J
PCB200	0.71 J	0.81	ND U	ND	U
PCB201	0.67 J	0.64 J	ND U	0.12	J
PCB203/196	4.66	4.90	0.67 J	0.64	J
PCB205	ND U	ND U	ND U	ND	U
PCB206	2.71	3.07	0.61 J	0.42	J
PCB207	0.30 J	0.34 J	ND U	ND	U
PCB209	0.70 J	0.77	0.28 J	0.17	J
	10583.75	8053.68	849.14	456.68	

Surrogate Recovery (%)				
PCB104	68	65	51	57
PCB14	58	55	38 &	42
PCB34	63	64	43	49
PCB112	72	74	61	64

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this analyte.

LOC	T-O-A-17	T-O-A-18	T-O-A-19	T-O-A-20
Cl 1	215.33	22.49	1.13	2.79
Cl 2	2664.02	578.29	12.28	24.51
Cl 3	3026.37	2218.67	191.91	75.59
Cl 4	2956.84	3544.88	434.74	149.50
Cl 5	1147.76	1163.01	143.09	120.14
Cl 6	457.47	413.79	50.79	68.72
Cl 7	95.12	90.62	11.75	12.66
Cl 8	17.14	17.75	2.57	2.19
Cl 9	3.00	3.42	0.61	0.42
Cl 10	0.70	0.77	0.28	0.17
SUM PCB	10583.75	8053.68	849.14	456.68

Battelle
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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TOB

Client Reporting Sample ID:	T-O-B-1	T-O-B-2	T-O-B-3	T-O-B-4
Battelle Sample ID:	W2649	W2650	W2651	W2652
Extraction Batch ID:	01-208	01-208	01-208	01-208
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	68.62	65.32	65.59	47.81
Sample Dry Weight (g):	2.66	5.33	4.84	8.00
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	2.18 J	1.92 J	2.13 J	1.19 J
PCB1	79.62	106.14	186.90	130.21
PCB3	21.06	20.82	34.60	27.73
PCB4/10	563.90	569.01	904.64	690.00 Y
PCB6	19.41	16.25	27.28	19.03
PCB7/9	4.91	4.57	7.03	4.96
PCB8/5	195.71	155.87	277.29	181.26
PCB12/13	6.03	3.72	6.41	4.52
PCB16/32	336.07	239.25	374.98	247.86
PCB17	157.30	109.25	180.72	121.33
PCB18	83.53	66.86	108.90	72.38
PCB19	378.42	297.70	461.07	358.77
PCB21	ND U	ND U	ND U	ND U
PCB22	16.85	14.92	19.90	13.74
PCB24/27	153.54	106.27	162.80	124.73
PCB25	18.59	14.84	22.91	15.42
PCB26	61.69	44.44	69.24	47.56
PCB28	92.04	82.03	116.16	82.13
PCB29	ND U	0.93 J	0.89 J	0.88 J
PCB31	105.41	83.28	120.42	85.28
PCB33/20	16.14	14.47	19.38	11.46
PCB40	16.06	16.33	22.12	13.42
PCB41/64/71	148.19	131.54	192.60	119.04
PCB42	48.77	44.27	65.46	41.70
PCB43	ND U	ND U	ND U	ND U
PCB44	103.74	99.00	142.69	88.32
PCB45	29.94	24.90	32.90	22.61
PCB46	9.84	8.64	12.61	7.89
PCB47/75	206.75	139.05	208.76	148.93
PCB48	17.55	14.97	23.53	10.11
PCB49	238.77	172.07	259.23	178.33
PCB51	142.52	80.09	118.39	91.02
PCB52	269.00	204.82	306.43	214.73
PCB53	219.52	127.89	190.69	150.23
PCB56/60	80.75	85.15	139.93	72.18
PCB59	15.79	12.31	17.54	11.70
PCB63	12.91	10.70	13.80	8.53
PCB66	150.81	147.74	253.35	129.97
PCB70/76	121.41	114.41	177.93	104.88
PCB74	99.47	91.87	143.09	85.07
PCB82	18.35	18.75	40.25	14.50
PCB83	13.52	10.88	17.74	8.20
PCB84	51.27	40.48	70.75	35.05
PCB85	33.66	29.21	58.97	23.08
PCB87/115	54.84	56.17	124.29	47.58
PCB89	93.61	83.65	129.36	60.47
PCB91	75.93	45.97	70.26	43.68
PCB92	51.15	37.37	61.06	32.13
PCB95	195.59	141.45	234.17	131.86
PCB97	46.07	43.64	88.17	35.14
PCB99	120.02	86.70	152.59	75.57
PCB100	10.89	6.53	8.71	6.49
PCB101/90	89.16	65.57	157.78	70.38
PCB105	52.00	52.40	127.17	40.10
PCB107	17.62	13.37	24.48	10.62
PCB110	311.91	225.65	424.30	194.84
PCB114	3.94	3.62	7.35	2.91
PCB118	168.65	141.80	307.08	119.09
PCB119	15.06	9.54	12.65	7.83
PCB124	4.44	3.87	9.59	3.19
PCB128	30.41	23.34	48.71	18.91
PCB129	6.71	4.80	11.08	3.68
PCB130	11.86	8.85	17.26	6.88

Client Reporting Sample ID:	T-O-B-1	T-O-B-2	T-O-B-3	T-O-B-4
PCB131	1.98 J	1.67 J	3.44	1.24
PCB132	55.41	42.31	86.39	34.79
PCB134	11.59	8.57	14.97	7.05
PCB135/144	34.83	23.16	39.79	20.52
PCB136	26.11	17.34	29.86	15.60
PCB137	7.71	6.51	14.20	5.19
PCB138/160/163	202.14	151.70	306.37	123.29
PCB141	17.31	13.97	32.99	11.14
PCB146	33.39	22.18	35.54	18.09
PCB149	134.34	91.79	163.94	79.36
PCB151	35.39	25.11	40.57	21.53
PCB153	140.84	99.69	188.20	82.85
PCB156	16.35	12.94	26.51	10.78
PCB158	14.01	11.53	25.20	9.05
PCB167	6.59	4.89	9.41	3.80
PCB169	ND U	ND U	ND U	ND U
PCB170/190	18.23	14.21	22.68	10.41
PCB171	5.44	3.59	6.78	3.14
PCB172	1.19 J	0.86 J	1.40 J	0.60 J
PCB173	ND U	ND U	ND U	ND U
PCB174	13.25	10.09	18.23	7.79
PCB175	ND U	ND U	ND U	ND U
PCB176	2.43 J	1.45 J	2.79	1.31
PCB177	12.79	8.84	13.81	7.47
PCB178	5.01	3.36	4.49	2.83
PCB180	26.16	18.89	29.81	14.28
PCB183	7.07	5.21	8.54	4.01
PCB184	ND U	ND U	ND U	ND U
PCB185	1.54 J	0.89 J	1.58 J	0.62 J
PCB187/182	19.99	13.61	19.95	10.98
PCB189	1.57 J	1.21 J	1.83 J	0.73 J
PCB191	ND U	ND U	0.91 J	0.53 J
PCB193	1.94 J	1.66 J	2.18	1.23
PCB194	3.42 J	2.45	2.66	1.74
PCB195	2.46 J	1.45	1.89	1.30
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	4.06	3.05	3.55	2.16
PCB200	ND U	ND U	ND U	0.29 J
PCB201	ND U	ND U	0.76 J	0.58 J
PCB203/196	3.81	2.70	3.48	1.79
PCB205	ND U	ND U	ND U	ND U
PCB206	2.19 J	1.54	1.52 J	1.08
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	0.46 J	ND U	ND U

Surrogate Recovery (%)				
PCB104	64	64	58	72
PCB14	54	56	49	63
PCB34	62	62	58	72
PCB112	70	69	62	74

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-O-B-1	T-O-B-2	T-O-B-3	T-O-B-4
Cl 1	100.69	126.95	221.49	157.94
Cl 2	789.97	749.43	1222.65	899.77
Cl 3	1419.59	1074.24	1657.38	1181.55
Cl 4	1931.78	1525.75	2321.06	1498.67
Cl 5	1427.65	1116.62	2126.70	962.74
Cl 6	786.97	570.34	1094.44	473.74
Cl 7	116.62	83.85	134.97	65.93
Cl 8	13.76	9.66	12.34	7.85
Cl 9	2.19	1.54	1.52	1.08
Cl 10	0.00	0.46	0.00	0.00
SUM PCB	6589.22	5258.85	8792.55	5249.27

Battelle
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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TOB

Client Reporting Sample ID:	T-O-B-5	T-O-B-6	T-O-B-7	T-O-B-8
Battelle Sample ID:	W2653	W2654	W2655	W2656
Extraction Batch ID:	01-208	01-208	01-208	01-208
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	54.43	47.82	55.98	57.35
Sample Dry Weight (g):	7.25	9.35	6.42	6.83
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	3.00	1.87	1.60 J	1.11 J
PCB1	232.96	106.43	56.73	28.62
PCB3	49.45	23.47	12.81	8.37
PCB4/10	1028.81 Y	492.19	281.05	153.10
PCB6	30.69	14.82	8.92	5.59
PCB7/9	7.67	3.94	2.76	1.64
PCB8/5	296.10	148.27	84.42	53.00
PCB12/13	7.58	4.33	3.05	2.58
PCB16/32	349.49	218.40	150.87	95.34
PCB17	174.58	118.01	67.30	43.87
PCB18	104.48	55.08	38.75	24.94
PCB19	490.51	260.44	171.36	98.20
PCB21	ND U	ND U	ND U	ND U
PCB22	18.65	12.91	11.44	7.50
PCB24/27	165.92	84.37	57.15	36.76
PCB25	21.35	12.83	9.77	6.69
PCB26	68.34	37.46	27.06	18.01
PCB28	112.27	74.04	63.31	43.28
PCB29	1.06 J	0.57 J	0.58 J	0.37 J
PCB31	121.14	68.65	53.52	37.76
PCB33/20	14.94	11.60	10.40	7.21
PCB40	16.67	12.16	10.68	7.04
PCB41/64/71	148.69	103.74	82.87	56.35
PCB42	49.73	35.36	30.05	20.59
PCB43	ND U	ND U	ND U	ND U
PCB44	110.95	77.84	67.63	45.12
PCB45	28.50	18.73	15.61	9.93
PCB46	9.98	6.86	5.44	3.82
PCB47/75	174.23	135.24	92.06	64.50
PCB48	18.84	13.77	12.26	8.52
PCB49	217.53	142.10	116.25	79.54
PCB51	107.64	70.54	48.12	32.39
PCB52	259.26	164.91	135.06	88.94
PCB53	175.14	99.77	75.46	48.79
PCB56/60	90.58	67.65	61.89	42.53
PCB59	14.40	9.56	8.08	5.56
PCB63	10.81	7.76	6.71	5.13
PCB66	167.68	123.72	109.76	77.58
PCB70/76	135.68	97.08	85.55	58.86
PCB74	108.38	77.72	68.86	48.16
PCB82	17.72	14.26	13.04	9.44
PCB83	10.81	7.43	7.12	4.93
PCB84	43.27	30.50	26.08	17.86
PCB85	29.14	22.50	21.09	15.39
PCB87/115	60.80	45.92	40.52	29.08
PCB89	82.28	59.89	49.39	39.30
PCB91	49.71	36.43	29.02	21.45
PCB92	38.29	27.87	24.16	17.43
PCB95	155.53	107.70	92.69	63.56
PCB97	44.35	33.60	30.49	22.29
PCB99	92.22	67.22	60.77	44.12
PCB100	7.10	5.08	4.33	3.26
PCB101/90	79.71	58.20	58.43	47.81
PCB105	50.70	41.39	38.56	29.19
PCB107	12.82	9.96	9.38	7.14
PCB110	236.57	172.58	151.78	111.51
PCB114	3.44	2.71	2.59	1.95
PCB118	148.44	114.69	105.61	78.53
PCB119	8.90	6.56	6.18	4.28
PCB124	3.94	3.39	2.79	1.73
PCB128	21.80	18.60	17.27	13.84
PCB129	4.53	3.64	3.84	2.59
PCB130	7.86	6.76	5.98	4.65

Client Reporting Sample ID:	T-O-B-5	T-O-B-6	T-O-B-7	T-O-B-8
PCB131	1.46	1.26	1.14 J	0.83 J
PCB132	40.49	30.93	29.69	22.32
PCB134	7.77	6.34	5.25	4.45
PCB135/144	22.04	17.07	15.16	11.58
PCB136	17.08	12.93	11.47	8.49
PCB137	5.88	5.20	5.29	3.73
PCB138/160/163	142.79	116.06	109.83	84.75
PCB141	13.74	11.53	11.07	8.07
PCB146	19.47	15.65	14.65	11.81
PCB149	89.00	67.65	62.59	47.11
PCB151	23.00	17.32	15.66	11.71
PCB153	95.29	75.74	71.64	55.43
PCB156	11.68	10.20	9.22	7.19
PCB158	10.07	8.64	8.56	6.01
PCB167	4.75	3.45	3.48	2.77
PCB169	ND U	ND U	ND U	ND U
PCB170/190	12.26	12.30	12.30	9.92
PCB171	3.23	2.61	2.57	2.65
PCB172	0.66 J	0.61 J	0.71 J	0.60 J
PCB173	ND U	0.36 J	ND U	ND U
PCB174	8.60	7.46	7.76	5.75
PCB175	0.33 J	0.49 J	0.62 J	0.56 J
PCB176	1.43	1.10	1.13 J	0.86 J
PCB177	7.65	6.16	6.03	5.12
PCB178	2.80	2.31	2.09	2.13
PCB180	15.79	13.57	14.27	11.32
PCB183	4.29	3.56	3.40	3.07
PCB184	ND U	ND U	ND U	ND U
PCB185	0.79 J	0.70 J	0.81 J	0.62 J
PCB187/182	10.93	8.87	9.04	7.83
PCB189	0.98 J	0.95 J	0.92 J	0.81 J
PCB191	0.38 J	0.32 J	0.44 J	0.46 J
PCB193	1.43	0.96 J	1.07 J	0.87 J
PCB194	1.80	1.78	2.04	1.89
PCB195	1.29	0.97	1.67	1.13
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	2.06	1.71	2.12	2.33
PCB200	ND U	0.70 J	ND U	ND U
PCB201	0.31 J	0.52 J	0.52 J	ND U
PCB203/196	1.83	1.82	1.84	2.07
PCB205	ND U	ND U	ND U	ND U
PCB206	1.07	0.99	1.18	1.39
PCB207	ND U	ND U	ND U	ND U
PCB209	0.43 J	0.22 J	0.45 J	0.61 J

Surrogate Recovery (%)				
PCB104	69	71	68	65
PCB14	61	64	58	56
PCB34	71	72	63	60
PCB112	70	71	68	67

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria go
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standarc
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-O-B-5	T-O-B-6	T-O-B-7	T-O-B-8
Cl 1	282.42	129.90	69.54	36.99
Cl 2	1370.85	663.54	380.20	215.92
Cl 3	1642.73	954.34	661.49	419.92
Cl 4	1844.72	1264.52	1032.35	703.34
Cl 5	1175.72	867.87	774.02	570.24
Cl 6	538.69	428.97	401.80	307.33
Cl 7	71.55	62.33	63.16	52.55
Cl 8	7.29	7.51	8.19	7.42
Cl 9	1.07	0.99	1.18	1.39
Cl 10	0.43	0.22	0.45	0.61
SUM PCB	6935.48	4380.18	3392.38	2315.71

Battelle
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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: TOB

Client Reporting Sample ID:	T-O-B-9	T-O-B-10	T-O-B-11	T-O-B-13	T-O-B-15
Battelle Sample ID:	W2657	W2658	W2659	W2660	W2661
Extraction Batch ID:	01-208	01-208	01-208	01-208	01-208
Batch Matrix:	Sediment	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	38.76	22.32	15.46	15.24	12.94
Sample Dry Weight (g):	10.89	12.33	15.96	13.94	13.13
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB					
Biphenyl	0.63 J	0.84 J	0.35 J	0.54 J	0.25 J
PCB1	18.10	205.60	31.68	53.39	3.66
PCB3	6.66	46.99	18.72	17.34	1.74
PCB4/10	57.75	958.94 DY	143.91	213.46	16.45
PCB6	2.71	24.97	5.02	5.77	1.22
PCB7/9	0.88	6.44	1.23	1.71	0.50 J
PCB8/5	28.22	313.05	62.25	49.10	7.71
PCB12/13	1.21	3.95	1.64	1.39	0.24 J
PCB16/32	39.10	408.03	38.78	39.18	10.58
PCB17	21.28	188.74	21.73	23.47	7.29
PCB18	11.42	82.24	11.93	12.68	4.74
PCB19	32.67	374.16	51.86	69.93	7.62
PCB21	ND U	ND U	ND U	ND U	ND U
PCB22	6.38	7.41	1.96	1.09	ND U
PCB24/27	15.10	158.48	22.80	25.74	3.39
PCB25	3.52	14.28	1.78	2.25	0.99
PCB26	8.88	41.74	5.99	7.04	1.93
PCB28	37.11	56.42	9.81	5.59	1.09
PCB29	0.24 J	0.64 J	0.24 J	0.23 J	ND U
PCB31	20.71	81.77	12.41	9.77	2.57
PCB33/20	4.79	8.71	1.75	0.93	ND U
PCB40	3.77	4.88	0.60	0.31 J	ND U
PCB41/64/71	29.90	58.25	7.09	5.70	2.01
PCB42	10.93	18.02	1.77	1.11	ND U
PCB43	ND U	ND U	ND U	ND U	ND U
PCB44	22.72	33.82	3.22	2.08	0.46 J
PCB45	4.29	13.52	1.57	1.44	0.37 J
PCB46	1.64	3.20	0.55 J	0.50 J	ND U
PCB47/75	31.63	136.25	10.18	13.25	5.47
PCB48	4.61	ND U	0.87	ND U	ND U
PCB49	38.00	140.30	11.46	13.33	5.80
PCB51	12.72	95.77	9.76	14.24	4.94
PCB52	41.88	147.73	14.15	18.01	6.64
PCB53	20.32	154.60	13.86	21.00	6.04
PCB56/60	27.86	17.40	2.29	1.37	0.29 J
PCB59	2.87	6.60	0.76	0.71	ND U
PCB63	2.64	5.86	0.46 J	0.29 J	ND U
PCB66	54.72	38.25	4.31	3.00	0.79
PCB70/76	40.45	35.76	4.04	2.82	0.76
PCB74	30.14	36.77	4.39	2.76	0.61 J
PCB82	4.98	3.42	0.51 J	0.45 J	ND U
PCB83	2.71	4.55	0.31 J	ND U	ND U
PCB84	9.32	17.51	1.91	1.56	0.58 J
PCB85	8.00	7.73	0.89	0.72	ND U
PCB87/115	16.84	11.71	1.36	1.14	ND U
PCB89	22.50	29.96	2.53	1.40	0.79
PCB91	10.12	34.32	3.21	2.70	1.12
PCB92	8.86	21.51	1.50	1.38	ND U
PCB95	30.93	82.05	7.72	9.52	4.16
PCB97	11.84	10.27	1.21	0.85	ND U
PCB99	23.54	40.55	3.58	2.21	0.65 J
PCB100	1.60	6.18	0.57	1.06	0.63 J
PCB101/90	17.30	31.11	2.52	2.35	1.11
PCB105	15.64	9.37	1.23	0.82	0.24 J
PCB107	3.84	6.04	0.46 J	0.45 J	ND U
PCB110	56.97	113.63	10.94	9.07	3.23
PCB114	1.06	0.84	0.21 J	ND U	ND U
PCB118	43.67	44.36	4.47	3.37	0.93
PCB119	2.15	7.91	0.58	0.58 J	ND U
PCB124	1.49	0.61 J	ND U	ND U	ND U
PCB128	6.37	6.37	0.75	0.59 J	ND U
PCB129	1.25	1.44	0.28 J	ND U	ND U
PCB130	2.37	3.78	0.40 J	0.34 J	ND U

Client Reporting Sample ID:	T-O-B-9	T-O-B-10	T-O-B-11	T-O-B-13	T-O-B-15
PCB131	0.53 J	0.40 J	ND U	ND U	ND U
PCB132	10.75	15.38	1.59	1.07	0.32 J
PCB134	1.92	3.80	0.44 J	0.32 J	ND U
PCB135/144	5.55	14.00	1.21	1.09	0.43 J
PCB136	4.07	9.61	1.12	1.24	0.67 J
PCB137	1.86	1.79	0.25 J	0.19 J	ND U
PCB138/160/163	40.92	54.95	5.14	4.90	1.67
PCB141	4.09	3.12	0.34 J	0.39 J	ND U
PCB146	6.04	13.66	1.06	1.22	0.48 J
PCB149	22.39	48.32	4.13	3.32	1.54
PCB151	5.74	14.33	1.20	1.40	0.46 J
PCB153	26.72	47.39	3.83	3.38	1.23
PCB156	3.41	3.42	0.41 J	0.21 J	ND U
PCB158	2.97	2.89	0.42 J	0.26 J	ND U
PCB167	1.36	1.51	0.17 J	ND U	ND U
PCB169	ND U	ND U	ND U	ND U	ND U
PCB170/190	4.22	6.66	0.64	0.77	ND U
PCB171	1.10	1.84	0.16 J	0.22 J	ND U
PCB172	0.33 J	0.41 J	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U	ND U
PCB174	2.57	4.77	0.38 J	0.41 J	ND U
PCB175	0.22 J	0.34 J	ND U	ND U	ND U
PCB176	0.56 J	1.04	ND U	ND U	ND U
PCB177	2.59	5.09	0.48 J	0.66 J	ND U
PCB178	0.99	2.29	0.25 J	0.41 J	ND U
PCB180	5.12	8.74	0.71	0.72	0.21 J
PCB183	1.50	2.52	0.22 J	0.26 J	ND U
PCB184	ND U	ND U	ND U	ND U	ND U
PCB185	0.45 J	0.34 J	ND U	ND U	ND U
PCB187/182	3.66	8.39	0.82	0.98	0.61 J
PCB189	0.23 J	0.62 J	ND U	ND U	ND U
PCB191	0.26 J	0.26 J	ND U	ND U	ND U
PCB193	0.31 J	0.86	ND U	ND U	ND U
PCB194	0.58 J	1.62	ND U	ND U	ND U
PCB195	0.44 J	0.86	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U	ND U
PCB199	1.14	1.83	0.29 J	0.35 J	ND U
PCB200	ND U	0.43 J	ND U	ND U	ND U
PCB201	ND U	0.48 J	ND U	ND U	ND U
PCB203/196	0.73 J	1.52	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U	ND U
PCB206	0.48 J	0.98	ND U	0.31 J	ND U
PCB207	ND U	ND U	ND U	ND U	ND U
PCB209	ND U	0.21 J	ND U	ND U	ND U

Surrogate Recovery (%)					
PCB104	63	75	60	71	71
PCB14	53	60	47	61	65
PCB34	57	83	54	64	65
PCB112	63	75	59	70	73

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria go
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standarc
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-O-B-9	T-O-B-10	T-O-B-11	T-O-B-13	T-O-B-15
Cl 1	24.76	252.59	50.40	70.73	5.40
Cl 2	90.77	1307.35	214.05	271.42	26.12
Cl 3	201.22	1422.64	181.05	197.88	40.21
Cl 4	381.10	947.01	91.33	101.90	34.18
Cl 5	293.36	483.63	45.72	39.64	13.43
Cl 6	148.34	246.15	22.75	19.92	6.79
Cl 7	24.13	44.18	3.66	4.42	0.83
Cl 8	2.89	6.73	0.29	0.35	0.00
Cl 9	0.48	0.98	0.00	0.31	0.00
Cl 10	0.00	0.21	0.00	0.00	0.00
SUM PCB	1167.04	4711.46	609.24	706.57	126.95

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Client Reporting Sample ID:	T-O-C-1	T-O-C-2	T-O-C-3	T-O-C-4
Battelle Sample ID:	W2664	W2665	W2666	W2667
Extraction Batch ID:	01-202	01-202	01-202	01-202
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	62.56	38.90	40.08	52.42
Sample Dry Weight (g):	5.42	9.25	9.93	7.59
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	1.17 J	0.47 J	0.50 J	0.53 J
PCB1	35.56	19.66	13.53	12.33
PCB3	6.83	3.80	2.92	2.33
PCB4/10	179.10	92.34	54.14	56.94
PCB6	6.56	3.17	2.02	2.12
PCB7/9	1.87	0.91	0.55 J	0.62 J
PCB8/5	60.30	28.92	17.91	18.90
PCB12/13	1.61	0.66 J	0.45 J	0.57 J
PCB16/32	101.54	44.34	24.66	34.38
PCB17	45.36	20.30	10.63	14.17
PCB18	27.99	12.79	6.53	8.47
PCB19	105.87	50.80	28.15	34.91
PCB21	ND U	ND U	ND U	ND U
PCB22	8.07	3.05	1.71	2.70
PCB24/27	41.52	19.03	9.52	12.33
PCB25	6.29	3.81	1.63	2.24
PCB26	18.39	8.62	4.72	6.43
PCB28	41.75	17.41	9.42	15.11
PCB29	0.43 J	0.19 J	0.15 J	0.10 J
PCB31	37.67	16.43	8.71	12.85
PCB33/20	8.69	3.10	1.69	2.81
PCB40	7.13	2.93	1.39	2.39
PCB41/64/71	56.50	24.13	12.21	19.62
PCB42	19.63	8.60	4.35	7.14
PCB43	ND U	ND U	ND U	ND U
PCB44	44.57	18.31	9.36	15.56
PCB45	10.40	4.38	2.22	3.48
PCB46	3.67	1.60	0.86	1.25
PCB47/75	65.35	29.48	13.52	21.18
PCB48	9.42	3.91	1.83	3.41
PCB49	79.52	37.11	17.28	26.23
PCB51	35.24	16.21	8.31	11.18
PCB52	90.92	40.89	20.71	31.41
PCB53	53.01	24.69	11.59	15.55
PCB56/60	37.61	16.03	8.36	14.16
PCB59	5.46	2.25	1.02	1.62
PCB63	4.58	1.83	0.90	1.56
PCB66	69.02	28.97	15.26	25.26
PCB70/76	52.74	22.19	11.81	19.15
PCB74	43.93	18.11	9.94	16.04
PCB82	8.52	3.72	1.61	2.97
PCB83	4.73	2.11	1.08	1.52
PCB84	18.11	7.54	3.59	5.69
PCB85	13.49	5.85	2.93	4.67
PCB87/115	26.30	11.47	6.83	9.24
PCB89	24.75	11.06	5.58	10.13
PCB91	20.34	8.81	4.23	6.45
PCB92	17.18	6.90	3.44	5.40
PCB95	62.50	26.74	12.32	18.89
PCB97	19.69	8.26	3.98	6.85
PCB99	40.16	16.77	7.75	13.11
PCB100	3.18	1.34	0.67 J	0.97 J
PCB101/90	41.69	19.04	8.30	14.05
PCB105	24.12	10.50	5.15	8.68
PCB107	6.01	2.38	1.28	1.96
PCB110	103.12	42.82	19.48	31.36
PCB114	1.54	0.72 J	0.39 J	0.61 J
PCB118	66.78	27.65	14.15	22.79
PCB119	4.25	1.75	0.73 J	1.30
PCB124	2.22	0.78 J	0.46 J	0.68 J
PCB128	12.24	5.35	2.70	4.06
PCB129	2.49	1.13	0.54 J	1.00 J
PCB130	4.27	1.64	0.90	1.35
PCB131	0.73 J	0.32 J	0.17 J	0.18 J

Client Reporting Sample ID:	T-O-C-1	T-O-C-2	T-O-C-3	T-O-C-4
PCB132	20.41	8.49	4.12	6.66
PCB134	3.67	1.74	0.69 J	1.04 J
PCB135/144	11.18	4.46	2.00	3.05
PCB136	8.12	3.44	1.74	2.66
PCB137	3.35	1.39	0.69 J	1.11 J
PCB138/160/163	76.31	31.67	15.22	23.37
PCB141	6.93	3.07	1.64	2.51
PCB146	10.97	4.23	2.14	3.06
PCB149	44.81	17.93	8.32	12.95
PCB151	11.45	4.59	2.04	3.03
PCB153	51.89	20.93	10.46	16.07
PCB156	6.34	2.52	1.37	1.94
PCB158	5.19	2.42	1.04	1.64
PCB167	2.50	1.06 J	0.51 J	0.76 J
PCB169	ND U	ND U	ND U	ND U
PCB170/190	8.72	3.56	1.78	2.58
PCB171	2.15	0.86 J	0.50 J	0.73 J
PCB172	0.51 J	0.21 J	0.10 J	0.15 J
PCB173	0.24 J	0.15 J	0.21 J	ND U
PCB174	5.31	2.38	1.08	1.74
PCB175	0.38 J	0.16 J	0.05 J	0.10 J
PCB176	0.84 J	0.35 J	0.18 J	0.28 J
PCB177	4.91	1.90	0.82 J	1.47
PCB178	1.67	0.68 J	0.37 J	0.34 J
PCB180	10.54	4.23	2.21	3.34
PCB183	2.78	1.21	0.65 J	0.80 J
PCB184	ND U	ND U	0.06 J	0.22 J
PCB185	0.47 J	0.27 J	0.13 J	0.21 J
PCB187/182	7.71	2.84	1.34	1.93
PCB189	0.58 J	0.19 J	0.14 J	0.22 J
PCB191	0.27 J	0.18 J	0.10 J	0.09 J
PCB193	0.88 J	0.28 J	0.13 J	0.19 J
PCB194	1.28 J	0.75 J	0.24 J	0.45 J
PCB195	0.66 J	0.34 J	0.76	0.29 J
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	1.73	0.52 J	0.39 J	0.50 J
PCB200	0.28 J	0.24 J	0.11 J	ND U
PCB201	0.63 J	0.13 J	ND U	0.21 J
PCB203/196	1.92	0.62 J	0.44 J	0.60 J
PCB205	0.12 J	0.18 J	ND U	0.41 J
PCB206	0.83 J	0.36 J	0.25 J	0.50 J
PCB207	0.10 J	0.05 J	ND U	ND U
PCB209	0.29 J	0.12 J	0.05 J	0.24 J

Surrogate Recovery (%)				
PCB104	65	67	63	59
PCB14	56	58	58	50
PCB34	60	61	56	52
PCB112	66	68	48	48

U = aayyte not detected, "ND" reported.
& = QC vyue outside the accuracy or precision criteria goy.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest cyibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-O-C-1	T-O-C-2	T-O-C-3	T-O-C-4
Cl 1	42.39	23.46	16.45	14.66
Cl 2	249.45	125.99	75.07	79.15
Cl 3	443.57	199.85	107.53	146.49
Cl 4	688.71	301.60	150.92	236.20
Cl 5	508.68	216.22	103.98	167.29
Cl 6	282.85	116.39	56.31	86.43
Cl 7	47.97	19.46	9.86	14.39
Cl 8	6.63	2.78	1.93	2.47
Cl 9	0.94	0.42	0.25	0.50
Cl 10	0.29	0.12	0.05	0.24
SUM PCB	2271.47	1006.29	522.35	747.81

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Client Reporting Sample ID:	T-O-C-5	T-O-C-6	T-O-C-7	T-O-C-8
Battelle Sample ID:	W2668	W2669	W2670	W2671
Extraction Batch ID:	01-202	01-202	01-202	01-202
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	55.15	58.86	57.26	54.00
Sample Dry Weight (g):	6.88	6.41	7.38	7.82
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.56 J	0.97 J	0.53 J	1.02 J
PCB1	14.63	9.70	10.37	86.00
PCB3	2.90	2.67	2.04	11.02
PCB4/10	61.32	55.75	67.81	417.07 Y
PCB6	2.64	2.57	2.19	10.00
PCB7/9	0.72 J	0.74 J	0.60 J	2.64
PCB8/5	24.35	23.29	20.27	92.69
PCB12/13	0.73 J	0.82 J	0.53 J	2.05
PCB16/32	45.26	43.40	37.57	162.62
PCB17	17.97	19.86	17.65	64.48
PCB18	10.47	11.90	10.20	38.28
PCB19	39.68	40.36	43.25	208.08
PCB21	ND U	ND U	ND U	ND U
PCB22	3.83	4.27	3.32	9.28
PCB24/27	14.96	15.89	16.23	73.07
PCB25	3.11	3.21	2.23	7.79
PCB26	9.01	8.98	6.45	25.91
PCB28	21.40	24.21	17.54	47.68
PCB29	0.15 J	0.24 J	0.22 J	0.39 J
PCB31	19.33	19.13	14.38	47.76
PCB33/20	3.88	4.55	3.63	7.26
PCB40	0.78 J	0.80 J	0.73 J	9.67
PCB41/64/71	28.21	32.30	24.27	80.56
PCB42	9.58	11.05	8.54	26.97
PCB43	ND U	ND U	ND U	ND U
PCB44	21.59	23.92	18.82	60.99
PCB45	4.51	4.95	4.06	15.10
PCB46	1.79	1.76	1.51	5.21
PCB47/75	30.54	35.35	26.75	87.67
PCB48	4.58	4.08	3.41	11.92
PCB49	38.41	41.36	30.85	105.87
PCB51	16.10	16.62	13.34	51.61
PCB52	44.84	48.67	36.83	127.36
PCB53	21.38	23.44	19.99	79.94
PCB56/60	21.94	24.51	16.28	48.97
PCB59	2.23	3.05	2.24	7.45
PCB63	2.43	2.83	2.16	5.53
PCB66	40.18	44.07	29.86	85.41
PCB70/76	30.86	33.50	21.06	65.59
PCB74	25.42	28.82	18.70	54.35
PCB82	4.30	5.29	3.48	10.97
PCB83	2.16	2.51	1.97	5.53
PCB84	8.22	9.70	6.83	22.37
PCB85	7.19	8.35	5.57	15.49
PCB87/115	13.98	15.64	10.79	32.67
PCB89	14.49	18.68	14.22	32.18
PCB91	9.93	11.55	7.76	25.67
PCB92	8.30	9.66	6.71	19.75
PCB95	27.55	33.18	24.22	80.32
PCB97	10.25	11.98	8.03	23.90
PCB99	20.22	24.72	16.27	48.28
PCB100	1.43	1.76	1.22	3.84
PCB101/90	23.46	22.20	16.41	56.51
PCB105	14.05	16.23	9.34	27.10
PCB107	3.28	4.39	2.22	6.73
PCB110	47.85	57.95	39.25	121.95
PCB114	0.95 J	0.99 J	0.72 J	1.80
PCB118	38.88	44.50	25.83	78.44
PCB119	1.79	2.13	1.64	4.53
PCB124	1.23	1.23 J	0.87 J	2.56
PCB128	6.14	7.10	4.21	11.53
PCB129	1.10 J	1.51	0.97 J	2.46
PCB130	2.03	2.66	1.48	4.20
PCB131	0.41 J	0.43 J	0.27 J	0.84 J

Client Reporting Sample ID:	T-O-C-5	T-O-C-6	T-O-C-7	T-O-C-8
PCB132	10.07	12.19	7.34	22.47
PCB134	1.60	1.87	1.26	4.31
PCB135/144	4.51	5.47	3.90	12.44
PCB136	4.08	4.74	2.88	8.88
PCB137	1.72	1.99	1.16 J	3.33
PCB138/160/163	36.27	44.38	26.25	76.84
PCB141	3.80	4.40	2.61	7.30
PCB146	5.10	6.26	3.95	10.98
PCB149	19.85	24.21	15.20	49.27
PCB151	4.44	5.66	3.93	13.40
PCB153	26.67	31.01	17.83	52.70
PCB156	3.48	3.94	2.02	5.79
PCB158	2.49	3.09	1.93	5.18
PCB167	1.26 J	1.71	0.89 J	2.12
PCB169	ND U	ND U	ND U	ND U
PCB170/190	3.94	4.87	2.37	7.34
PCB171	0.95 J	1.24 J	0.64 J	1.81
PCB172	0.24 J	0.29 J	0.18 J	0.37 J
PCB173	ND U	ND U	ND U	0.43 J
PCB174	2.35	3.10	1.69	4.81
PCB175	0.11 J	0.22 J	0.12 J	0.23 J
PCB176	0.46 J	0.56 J	0.21 J	0.69 J
PCB177	1.94	2.50	1.48	4.04
PCB178	0.64 J	0.89 J	0.62 J	1.49
PCB180	5.40	6.00	2.99	8.57
PCB183	1.26 J	1.57	0.96 J	2.38
PCB184	0.08 J	0.15 J	ND U	0.13 J
PCB185	0.25 J	0.35 J	0.23 J	0.48 J
PCB187/182	2.68	3.63	2.19	5.99
PCB189	0.35 J	0.27 J	0.27 J	0.53 J
PCB191	0.13 J	0.10 J	0.22 J	0.34 J
PCB193	0.25 J	0.26 J	0.22 J	0.62 J
PCB194	0.85 J	0.90 J	0.44 J	1.08 J
PCB195	0.39 J	0.60 J	0.24 J	0.80 J
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	0.98 J	0.90 J	0.67 J	1.31
PCB200	0.21 J	0.13 J	ND U	0.20 J
PCB201	0.20 J	0.28 J	ND U	0.25 J
PCB203/196	0.75 J	0.89 J	0.38 J	1.01 J
PCB205	ND U	ND U	ND U	0.19 J
PCB206	0.40 J	0.48 J	0.36 J	0.83 J
PCB207	0.08 J	ND U	ND U	0.20 J
PCB209	0.10 J	0.15 J	0.09 J	0.14 J

Surrogate Recovery (%)				
PCB104	59	57	63	59
PCB14	47	50	54	51
PCB34	50	51	56	57
PCB112	42	46	62	59

U = aayyte not detected, "ND" reported.
& = QC vyue outside the accuracy or precision criteria goy.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest cyibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-O-C-5	T-O-C-6	T-O-C-7	T-O-C-8
Cl 1	17.53	12.37	12.41	97.03
Cl 2	89.76	83.17	91.41	524.45
Cl 3	189.05	195.99	172.66	692.60
Cl 4	345.39	381.11	279.41	930.17
Cl 5	259.51	302.64	203.33	620.59
Cl 6	135.01	162.62	98.08	294.04
Cl 7	21.03	26.00	14.39	40.22
Cl 8	3.37	3.69	1.72	4.83
Cl 9	0.48	0.48	0.36	1.03
Cl 10	0.10	0.15	0.09	0.14
SUM PCB	1061.25	1168.22	873.86	3205.10

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Client Reporting Sample ID:	T-O-C-9	T-O-C-10	T-O-C-11	T-O-C-12
Battelle Sample ID:	W2672	W2673	W2674	W2675
Extraction Batch ID:	01-202	01-202	01-202	01-202
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	57.79	55.15	52.24	42.68
Sample Dry Weight (g):	6.73	7.14	7.79	8.67
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.72 J	0.83 J	0.62 J	0.72 J
PCB1	34.52	33.22	25.51	107.18
PCB3	5.86	7.14	8.10	45.59
PCB4/10	164.09	170.61	101.61	776.86 D
PCB6	5.27	6.47	5.13	31.91
PCB7/9	1.43	1.78	1.27	6.76
PCB8/5	50.31	67.39	61.76	659.45 D
PCB12/13	1.11 J	1.68	1.28	9.04
PCB16/32	90.09	116.97	83.22	613.31 D
PCB17	36.93	50.64	33.50	306.54 Y
PCB18	21.97	32.15	14.98	111.90
PCB19	91.80	102.75	60.08	418.07 Y
PCB21	ND U	ND U	ND U	ND U
PCB22	7.11	9.44	4.08	21.45
PCB24/27	33.99	43.27	27.08	219.01 Y
PCB25	4.91	8.12	4.06	22.76
PCB26	14.98	20.76	13.15	75.46
PCB28	37.47	44.82	24.78	110.28
PCB29	0.27 J	0.42 J	0.22 J	0.88 J
PCB31	32.04	41.26	25.36	149.95
PCB33/20	6.75	8.79	5.13	13.02
PCB40	7.92	9.10	3.51	9.28
PCB41/64/71	59.41	65.48	31.66	112.67
PCB42	22.32	24.46	11.66	33.62
PCB43	ND U	ND U	ND U	ND U
PCB44	48.42	53.95	24.47	59.53
PCB45	10.39	12.44	5.63	22.60
PCB46	4.16	4.80	1.82	5.53
PCB47/75	61.27	71.89	40.60	219.48 Y
PCB48	8.36	8.41	3.99	10.70
PCB49	73.66	85.90	46.44	234.11 Y
PCB51	28.48	36.44	23.60	155.67
PCB52	87.75	101.02	53.85	246.40 Y
PCB53	42.43	54.59	32.36	233.51 Y
PCB56/60	41.23	45.02	20.31	40.48
PCB59	5.40	6.37	2.70	10.67
PCB63	4.48	4.91	3.19	8.40
PCB66	73.42	75.53	39.09	86.00
PCB70/76	54.26	66.41	33.69	77.28
PCB74	44.09	48.56	26.78	73.37
PCB82	8.24	9.31	4.13	6.72
PCB83	3.82	4.86	2.51	7.29
PCB84	16.65	19.20	9.13	30.82
PCB85	12.96	14.28	7.06	14.22
PCB87/115	26.56	28.08	14.61	21.99
PCB89	34.29	38.91	19.38	43.82
PCB91	17.83	21.85	13.40	58.85
PCB92	14.74	17.20	10.39	33.38
PCB95	54.02	64.34	33.01	146.11
PCB97	19.64	20.87	10.01	18.16
PCB99	37.09	42.37	23.83	65.38
PCB100	2.59	2.76	1.89	10.58
PCB101/90	38.38	40.44	23.90	58.49
PCB105	23.18	24.35	12.33	19.31
PCB107	5.18	5.74	3.66	10.21
PCB110	90.30	105.32	55.71	200.01
PCB114	1.63	1.63	0.89 J	1.40
PCB118	63.23	66.43	37.84	85.37
PCB119	3.33	4.15	2.58	12.08
PCB124	2.08	2.14	1.23	1.20
PCB128	9.94	10.45	5.94	11.79
PCB129	2.27	2.12	1.37	1.77
PCB130	3.46	3.86	2.27	6.41
PCB131	0.70 J	0.65 J	0.40 J	0.70 J

Client Reporting Sample ID:	T-O-C-9	T-O-C-10	T-O-C-11	T-O-C-12
PCB132	17.48	19.37	11.16	27.75
PCB134	2.96	3.18	1.77	6.82
PCB135/144	7.90	9.96	5.69	23.50
PCB136	6.47	8.12	4.99	17.90
PCB137	2.80	2.68	1.60	2.85
PCB138/160/163	61.58	66.86	37.25	100.58
PCB141	6.37	6.36	3.47	5.26
PCB146	8.77	9.99	6.83	23.50
PCB149	34.75	43.10	24.93	82.08
PCB151	8.43	10.24	5.71	24.90
PCB153	41.49	48.41	30.03	84.94
PCB156	4.99	4.98	3.02	6.50
PCB158	4.39	4.96	2.27	4.62
PCB167	2.20	2.32	1.18 J	2.50
PCB169	ND U	ND U	ND U	ND U
PCB170/190	6.11	6.75	4.21	12.09
PCB171	1.49	1.59	1.12 J	3.35
PCB172	0.28 J	0.35 J	0.24 J	0.64 J
PCB173	0.29 J	0.20 J	ND U	0.29 J
PCB174	3.67	4.42	2.65	8.20
PCB175	0.18 J	0.29 J	0.20 J	0.36 J
PCB176	0.53 J	0.80 J	0.50 J	1.54
PCB177	2.86	3.93	2.30	9.64
PCB178	1.04 J	1.21	0.72 J	3.90
PCB180	7.18	8.15	5.45	15.37
PCB183	1.94	2.22	1.34	4.14
PCB184	0.19 J	ND U	0.16 J	0.11 J
PCB185	0.39 J	0.39 J	0.26 J	0.42 J
PCB187/182	4.31	5.74	3.33	15.53
PCB189	0.45 J	0.40 J	0.28 J	0.86 J
PCB191	0.27 J	0.24 J	0.09 J	0.36 J
PCB193	0.27 J	0.57 J	0.36 J	1.35
PCB194	0.98 J	1.35 J	0.76 J	2.81
PCB195	1.09	0.49 J	0.40 J	1.13
PCB197	ND U	ND U	ND U	0.31 J
PCB198	ND U	0.23 J	ND U	0.29 J
PCB199	1.00 J	1.63	0.83 J	3.23
PCB200	ND U	0.25 J	0.35 J	0.50 J
PCB201	0.27 J	0.28 J	ND U	0.67 J
PCB203/196	0.95 J	1.09 J	0.87 J	2.70
PCB205	ND U	ND U	ND U	ND U
PCB206	0.68 J	0.69 J	0.45 J	1.60
PCB207	ND U	0.23 J	ND U	0.29 J
PCB209	0.14 J	0.16 J	0.07 J	0.49 J

Surrogate Recovery (%)				
PCB104	62	59	61	63
PCB14	54	48	55	55
PCB34	56	54	56	73
PCB112	55	55	44	61

U = aayyte not detected, "ND" reported.
& = QC vyue outside the accuracy or precision criteria goy.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest cyibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-O-C-9	T-O-C-10	T-O-C-11	T-O-C-12
Cl 1	40.39	40.36	33.61	152.76
Cl 2	222.21	247.93	171.04	1484.02
Cl 3	378.31	479.39	295.62	2062.63
Cl 4	677.45	775.28	405.35	1639.29
Cl 5	475.73	534.20	287.49	845.39
Cl 6	226.93	257.60	149.87	434.36
Cl 7	31.43	37.24	23.20	78.16
Cl 8	4.29	5.32	3.21	11.62
Cl 9	0.68	0.92	0.45	1.89
Cl 10	0.14	0.16	0.07	0.49
SUM PCB	2057.56	2378.41	1369.91	6710.62

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Client Reporting Sample ID:	T-O-C-13	T-O-C-14	T-O-C-15	T-O-C-16
Battelle Sample ID:	W2676	W2677	W2678	W2679
Extraction Batch ID:	01-202	01-202	01-202	01-202
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	52.30	53.32	45.63	41.87
Sample Dry Weight (g):	7.47	8.13	8.66	7.80
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.85 J	0.80 J	0.67 J	0.67 J
PCB1	221.43	158.27	97.33	49.98
PCB3	86.21	63.37	47.26	40.66
PCB4/10	1231.98 D	810.55 D	604.09 D	338.55 Y
PCB6	57.44	54.74	41.27	25.42
PCB7/9	13.24	12.68	10.11	6.24
PCB8/5	926.01 D	558.16 D	400.52 Y	316.18 Y
PCB12/13	5.62	5.48	5.07	2.80
PCB16/32	699.88 D	978.38 D	826.68 D	515.09 Y
PCB17	378.86 Y	427.70 Y	354.55 Y	257.87
PCB18	183.74	167.11	155.67	83.53
PCB19	682.50 D	546.70 D	395.10 Y	279.21 Y
PCB21	ND U	ND U	ND U	ND U
PCB22	7.34	13.58	7.56	7.55
PCB24/27	302.85 Y	324.08 Y	236.17 Y	152.42
PCB25	44.10	52.50	39.76	23.76
PCB26	122.57	134.38	104.28	61.35
PCB28	68.64	94.83	33.24	41.49
PCB29	1.12	1.45	1.07	0.75 J
PCB31	185.50	206.81	176.98	111.14
PCB33/20	9.44	16.61	8.56	9.73
PCB40	6.52	12.07	7.43	6.24
PCB41/64/71	126.95	149.96	114.46	73.36
PCB42	32.38	47.16	31.55	21.84
PCB43	ND U	ND U	ND U	ND U
PCB44	51.87	96.27	60.89	49.27
PCB45	22.30	30.92	19.65	15.15
PCB46	4.91	7.20	4.60	3.82
PCB47/75	337.25 Y	433.02 Y	335.45 Y	227.23
PCB48	ND U	ND U	ND U	ND U
PCB49	395.04 Y	476.15 Y	390.07 Y	238.38
PCB51	246.52	289.03 Y	220.50	155.85
PCB52	404.11 Y	475.71 Y	382.37 Y	241.73
PCB53	399.83 Y	448.16 Y	352.99 Y	218.73
PCB56/60	17.13	27.64	15.83	20.37
PCB59	11.58	15.88	10.66	7.61
PCB63	11.61	17.36	7.63	7.20
PCB66	61.43	83.08	39.35	47.72
PCB70/76	54.62	71.66	50.22	51.10
PCB74	55.42	72.24	49.44	43.53
PCB82	5.69	7.78	3.92	4.10
PCB83	10.43	14.27	7.83	6.01
PCB84	44.47	56.18	39.68	25.37
PCB85	16.15	21.00	13.04	11.57
PCB87/115	20.35	25.88	13.44	14.30
PCB89	58.08	74.64	40.83	31.75
PCB91	104.61	123.55	88.14	55.74
PCB92	56.75	80.06	43.86	34.85
PCB95	238.60	297.98 Y	220.12	139.37
PCB97	13.72	21.02	12.30	12.27
PCB99	73.94	104.42	71.17	55.60
PCB100	19.27	24.03	17.75	12.19
PCB101/90	66.66	90.31	56.42	43.22
PCB105	15.62	20.87	12.50	13.64
PCB107	16.50	22.32	13.57	12.11
PCB110	299.53	396.20 Y	276.25 Y	181.97
PCB114	1.27	1.83	1.14	1.15
PCB118	104.20	136.04	94.75	78.11
PCB119	21.07	28.91	16.70	11.76
PCB124	0.85 J	1.21	0.82 J	0.95 J
PCB128	16.87	21.32	13.74	11.02
PCB129	1.93	3.12	1.61	1.94
PCB130	11.64	14.18	9.10	6.40
PCB131	0.78 J	0.89 J	0.65 J	0.52 J

Client Reporting Sample ID:	T-O-C-13	T-O-C-14	T-O-C-15	T-O-C-16
PCB132	41.53	54.35	34.74	25.98
PCB134	12.02	14.36	9.23	5.73
PCB135/144	42.06	53.32	35.10	22.18
PCB136	31.34	38.54	27.89	19.43
PCB137	3.86	5.42	3.66	2.88
PCB138/160/163	158.78	201.51	133.80	98.91
PCB141	6.12	8.32	5.70	5.39
PCB146	42.90	57.77	36.45	28.85
PCB149	126.86	172.51	120.49	86.20
PCB151	45.80	57.35	37.11	23.53
PCB153	141.21	185.52	131.41	99.41
PCB156	8.42	11.05	8.20	6.35
PCB158	6.34	8.02	5.44	4.00
PCB167	4.14	4.76	3.74	2.87
PCB169	ND U	ND U	ND U	ND U
PCB170/190	23.07	28.25	19.83	14.20
PCB171	6.13	7.09	5.05	3.42
PCB172	1.27	1.62	1.13	0.86 J
PCB173	0.32 J	0.47 J	0.48 J	0.19 J
PCB174	13.33	17.28	12.00	8.38
PCB175	0.74 J	0.92 J	0.65 J	0.35 J
PCB176	2.96	3.64	2.65	1.98
PCB177	18.41	22.89	15.56	10.58
PCB178	7.82	9.25	6.61	3.91
PCB180	31.25	37.97	27.45	19.31
PCB183	7.70	9.61	6.65	4.38
PCB184	0.21 J	0.14 J	0.15 J	0.19 J
PCB185	0.73 J	1.02 J	0.85 J	0.64 J
PCB187/182	29.86	37.93	26.43	17.38
PCB189	1.34	1.61	1.20	0.75 J
PCB191	0.70 J	0.83 J	0.60 J	0.43 J
PCB193	2.37	3.10	2.22	1.58
PCB194	5.78	7.06	4.87	3.72
PCB195	2.09	3.10	2.08	1.27
PCB197	0.52 J	0.65 J	0.30 J	0.24 J
PCB198	0.50 J	0.65 J	0.32 J	0.28 J
PCB199	6.73	8.64	5.94	3.70
PCB200	0.96 J	1.17	0.81 J	0.52 J
PCB201	1.29	1.45	1.06	0.78 J
PCB203/196	5.60	7.15	4.97	3.29
PCB205	0.43 J	0.60 J	0.24 J	0.25 J
PCB206	3.62	4.57	3.13	2.02
PCB207	0.44 J	0.64 J	0.44 J	0.37 J
PCB209	0.82 J	1.15	0.75 J	0.44 J

Surrogate Recovery (%)				
PCB104	69	75	66	61
PCB14	57	62	55	55
PCB34	79	95	76	68
PCB112	62	68	56	43

U = aayyte not detected, "ND" reported.
& = QC vyue outside the accuracy or precision criteria goy.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest cyibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-O-C-13	T-O-C-14	T-O-C-15	T-O-C-16
Cl 1	307.64	221.65	144.59	90.64
Cl 2	2234.28	1441.61	1061.06	689.18
Cl 3	2686.53	2964.14	2339.61	1543.90
Cl 4	2239.46	2753.50	2093.10	1429.15
Cl 5	1187.77	1548.49	1044.23	746.04
Cl 6	702.57	912.32	618.07	451.58
Cl 7	148.20	183.63	129.52	88.55
Cl 8	23.90	30.46	20.59	14.05
Cl 9	4.06	5.21	3.57	2.39
Cl 10	0.82	1.15	0.75	0.44
SUM PCB	9535.25	10062.15	7455.07	5055.94

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Client Reporting Sample ID:	T-O-C-17	T-O-C-18	T-O-C-19	T-O-C-20
Battelle Sample ID:	W2680	W2681	W2682	W2683
Extraction Batch ID:	01-202	01-202	01-202	01-202
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	28.32	19.92	39.97	39.85
Sample Dry Weight (g):	11.26	13.05	8.42	13.67
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.39 J	0.27 J	1.74 J	0.57 J
PCB1	40.42	3.82	413.60 Y	94.40
PCB3	25.62	1.46	128.42	39.70
PCB4/10	324.56 Y	21.55	2511.26 D	522.57 D
PCB6	15.11	0.90	59.02	24.14
PCB7/9	3.76	0.26 J	15.57	6.26
PCB8/5	182.17	8.38	708.08 D	158.98 Y
PCB12/13	0.90	ND U	5.25	3.08
PCB16/32	271.51 Y	11.04	1136.36 D	245.98 Y
PCB17	118.92	4.83	409.51 Y	131.58 Y
PCB18	48.21	2.69	172.93	67.78
PCB19	184.93	11.57	929.71 D	182.35 Y
PCB21	ND U	ND U	ND U	ND U
PCB22	2.45	0.16 J	5.02	3.45
PCB24/27	90.77	5.24	404.82 Y	79.25
PCB25	14.25	0.67	46.33	31.41
PCB26	31.39	1.70	128.31	57.69
PCB28	14.32	0.68 J	23.06	20.97
PCB29	0.42 J	ND U	1.66	0.39 J
PCB31	41.55	1.89	135.76	62.20
PCB33/20	2.91	0.12 J	5.52	2.88
PCB40	2.50	0.43 J	5.41	3.11
PCB41/64/71	30.32	1.50	90.53	46.57
PCB42	6.45	0.29 J	13.78	10.83
PCB43	ND U	ND U	ND U	ND U
PCB44	19.53	0.79	37.06	21.01
PCB45	5.94	0.32 J	14.51	5.80
PCB46	2.06	0.13 J	4.46	1.88
PCB47/75	93.52	4.36	271.67	109.58
PCB48	ND U	ND U	ND U	ND U
PCB49	105.23	4.84	314.90 Y	126.25 Y
PCB51	83.95	3.85	285.71 Y	72.82
PCB52	122.59	5.96	397.09 Y	141.15 Y
PCB53	126.76	6.22	454.20 Y	110.04
PCB56/60	6.43	0.24 J	7.59	4.77
PCB59	3.37	0.20 J	8.91	3.12
PCB63	2.00	0.10 J	3.07	1.44
PCB66	16.34	0.82	20.96	12.36
PCB70/76	16.85	0.71 J	23.82	10.18
PCB74	8.09	0.43 J	15.75	15.09
PCB82	1.31	ND U	2.88	2.36
PCB83	2.48	0.24 J	4.16	2.30
PCB84	9.95	0.53 J	23.39	13.25
PCB85	3.49	0.29 J	8.05	4.57
PCB87/115	4.91	0.30 J	9.67	7.50
PCB89	17.13	0.44 J	15.95	11.79
PCB91	16.48	0.95	41.31	21.57
PCB92	13.13	0.57 J	23.39	9.55
PCB95	67.71	3.36	206.52	67.12
PCB97	2.67	0.17 J	6.12	5.21
PCB99	10.57	0.63 J	20.38	18.88
PCB100	6.43	0.38 J	20.96	5.36
PCB101/90	20.98	0.60 J	21.26	16.91
PCB105	4.78	0.19 J	9.32	6.46
PCB107	3.77	0.14	6.76	2.66
PCB110	70.83	3.20	176.01	82.60
PCB114	0.39 J	ND U	0.88 J	0.51 J
PCB118	20.11	0.97	38.72	26.33
PCB119	5.03	0.22 J	10.31	4.60
PCB124	0.24 J	ND U	0.38 J	0.36 J
PCB128	3.61	0.29 J	7.83	5.96
PCB129	0.55 J	ND U	0.98 J	0.76
PCB130	2.29	0.13 J	4.66	2.61
PCB131	0.20 J	ND U	0.42 J	0.33 J

Client Reporting Sample ID:	T-O-C-17	T-O-C-18	T-O-C-19	T-O-C-20
PCB132	7.56	0.36 J	15.36	12.40
PCB134	2.41	0.15 J	4.83	2.24
PCB135/144	9.02	0.51 J	17.79	8.02
PCB136	6.58	0.40 J	15.87	7.38
PCB137	0.86 J	ND U	1.75	1.29
PCB138/160/163	38.40	1.73	95.73	44.21
PCB141	1.52	0.10 J	2.87	2.17
PCB146	9.70	0.44 J	15.98	7.06
PCB149	25.18	1.21	48.30	37.58
PCB151	10.82	0.50 J	24.77	8.71
PCB153	30.13	1.34	53.56	32.99
PCB156	2.03	0.14 J	4.22	2.81
PCB158	1.43	0.12 J	3.66	2.70
PCB167	0.81 J	ND U	1.93	1.21
PCB169	ND U	ND U	ND U	ND U
PCB170/190	4.89	0.32 J	10.99	5.61
PCB171	1.45	ND U	3.01	1.63
PCB172	0.33 J	ND U	0.69 J	0.33 J
PCB173	0.17 J	ND U	0.36 J	0.13 J
PCB174	3.09	0.23 J	5.83	3.31
PCB175	0.23 J	ND U	0.39 J	0.21 J
PCB176	0.72 J	ND U	1.44	0.70
PCB177	5.05	0.31 J	10.55	4.58
PCB178	2.82	0.13 J	7.94	2.12
PCB180	6.55	0.33 J	14.11	6.81
PCB183	1.75	0.11 J	3.64	1.99
PCB184	0.07 J	0.05 J	0.19 J	0.09 J
PCB185	0.35 J	ND U	0.34 J	0.24 J
PCB187/182	9.02	0.43 J	17.18	7.45
PCB189	0.37 J	ND U	0.77 J	0.31 J
PCB191	0.31 J	ND U	0.40 J	0.20 J
PCB193	0.68 J	ND U	1.59	0.50 J
PCB194	1.59	ND U	4.06	1.08
PCB195	0.81	ND U	1.85	0.55
PCB197	0.20 J	ND U	0.45 J	0.14 J
PCB198	0.19 J	ND U	0.28 J	0.11 J
PCB199	2.13	ND U	5.08	1.58
PCB200	0.28 J	ND U	0.60 J	0.17 J
PCB201	0.47 J	ND U	1.03	0.33 J
PCB203/196	1.64	0.32 J	3.81	1.26
PCB205	0.21 J	ND U	0.51 J	0.05 J
PCB206	1.15	ND U	3.24	0.69
PCB207	0.24 J	ND U	0.57 J	0.13 J
PCB209	0.39 J	ND U	0.91	0.19 J

Surrogate Recovery (%)				
PCB104	72	54	74	63
PCB14	65	49	59	53
PCB34	74	50	78	60
PCB112	70	53	70	61

U = aayyte not detected, "ND" reported.
& = QC vyue outside the accuracy or precision criteria goy.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest cyibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	T-O-C-17	T-O-C-18	T-O-C-19	T-O-C-20
Cl 1	66.04	5.28	542.02	134.11
Cl 2	526.50	31.08	3299.18	715.03
Cl 3	821.63	40.58	3398.99	885.93
Cl 4	651.93	31.20	1969.42	695.99
Cl 5	282.38	13.17	646.42	309.89
Cl 6	153.11	7.42	320.50	180.42
Cl 7	37.85	1.91	79.42	36.20
Cl 8	7.51	0.32	17.67	5.27
Cl 9	1.38	0.00	3.81	0.82
Cl 10	0.39	0.00	0.91	0.19
SUM PCB	2548.73	130.98	10278.34	2963.85

Battelle
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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: Corbicula

Client Reporting Sample ID:	C1-A	C1-B	C3-C-1	C3-D-1
Battelle Sample ID:	W2738	W2739	W2742	W2743
Extraction Batch ID:	01-209	01-209	01-209	01-209
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	25.36	31.63	16.31	19.27
Sample Dry Weight (g):	14.24	11.34	14.18	13.93
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight

PCB				
Biphenyl	1.39	0.92 J	1.58	1.22
PCB1	10.71	1.39	ND U	ND U
PCB3	2.26	0.25 J	ND U	ND U
PCB4/10	100.12	8.45	0.07 J	0.37 J
PCB6	34.32	2.27	ND U	ND U
PCB7/9	17.31	1.16	ND U	ND U
PCB8/5	207.18	9.93	ND U	ND U
PCB12/13	6.67	0.69 J	ND U	ND U
PCB16/32	183.98	18.88	ND U	0.24 J
PCB17	119.66	9.31	0.13 J	0.10 J
PCB18	289.39 Y	21.19	0.11 J	0.13 J
PCB19	34.31	6.64	ND U	0.19 J
PCB21	ND U	ND U	ND U	ND U
PCB22	106.91	9.48	ND U	ND U
PCB24/27	22.78	3.96	ND U	0.08 J
PCB25	19.25	2.44	ND U	ND U
PCB26	44.00	5.52	ND U	ND U
PCB28	320.84 Y	25.91	0.15 J	0.14 J
PCB29	2.25	0.38 J	ND U	ND U
PCB31	262.78 Y	20.96	0.17 J	0.15 J
PCB33/20	196.63	13.65	ND U	ND U
PCB40	24.33	4.31	0.44 J	0.25 J
PCB41/64/71	149.62	25.04	0.40 J	0.44 J
PCB42	63.59	10.44	0.15 J	ND U
PCB43	ND U	ND U	ND U	ND U
PCB44	148.52	23.83	0.34 J	0.23 J
PCB45	33.89	5.97	ND U	ND U
PCB46	13.67	2.59	ND U	ND U
PCB47/75	36.89	8.84	0.18 J	0.15 J
PCB48	49.85	5.10	ND U	ND U
PCB49	130.29	21.52	0.34 J	0.54 J
PCB51	8.98	1.83	ND U	ND U
PCB52	157.85	25.49	0.45 J	0.63 J
PCB53	32.47	5.54	ND U	ND U
PCB56/60	127.89	21.68	0.33 J	0.43 J
PCB59	13.85	2.72	0.05 J	ND U
PCB63	4.98	1.16	ND U	ND U
PCB66	149.26	25.22	0.52 J	0.90
PCB70/76	163.67	25.03	0.31 J	0.46 J
PCB74	87.06	20.15	0.30 J	0.56 J
PCB82	9.17	2.93	ND U	ND U
PCB83	3.18	1.02	ND U	ND U
PCB84	16.82	4.93	ND U	ND U
PCB85	11.63	3.99	ND U	0.29 J
PCB87/115	28.09	8.73	0.30 J	ND U
PCB89	25.08	7.03	0.17 J	0.32 J
PCB91	8.48	2.64	ND U	0.12 J
PCB92	7.16	2.92	ND U	ND U
PCB95	43.20	11.65	0.25 J	0.42 J
PCB97	18.59	5.75	0.20 J	ND U
PCB99	22.81	7.26	0.39 J	0.43 J
PCB100	0.26 J	0.16 J	ND U	ND U
PCB101/90	25.50	9.05	0.26 J	0.42 J
PCB105	22.09	7.00	0.26 J	0.29 J
PCB107	2.64	1.11	ND U	ND U
PCB110	58.39	17.31	0.78	0.83
PCB114	1.36	0.63 J	ND U	ND U
PCB118	41.11	13.96	0.55 J	0.70 J
PCB119	0.85	ND U	ND U	ND U
PCB124	1.41	0.67 J	ND U	ND U
PCB128	3.99	2.31	ND U	ND U
PCB129	1.12	0.86	ND U	ND U
PCB130	1.08	0.82	ND U	ND U
PCB131	0.34 J	0.35 J	ND U	ND U
PCB132	6.29	3.03	0.26 J	0.17 J

Client Reporting Sample ID:	C1-A	C1-B	C3-C-1	C3-D-1
PCB134	0.97	0.54 J	ND U	ND U
PCB135/144	2.56	1.57	ND U	ND U
PCB136	2.10	0.98	ND U	ND U
PCB137	1.24	0.59 J	ND U	ND U
PCB138/160/163	21.81	10.82	0.55 J	0.68 J
PCB141	3.01	1.85	ND U	ND U
PCB146	1.80	1.01	ND U	ND U
PCB149	10.41	5.26	0.36 J	0.30 J
PCB151	2.32	1.33	ND U	ND U
PCB153	11.45	5.64	0.39 J	0.31 J
PCB156	2.10	1.51	ND U	ND U
PCB158	2.11	1.16	ND U	ND U
PCB167	0.71	0.56 J	ND U	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	2.13	2.05	ND U	ND U
PCB171	0.53 J	0.39 J	ND U	ND U
PCB172	0.12 J	ND U	ND U	ND U
PCB173	0.17 J	ND U	ND U	ND U
PCB174	1.41	0.80 J	ND U	ND U
PCB175	0.09 J	ND U	ND U	ND U
PCB176	0.19 J	ND U	ND U	ND U
PCB177	0.77	0.60 J	ND U	ND U
PCB178	0.29 J	ND U	ND U	ND U
PCB180	2.78	1.99	ND U	ND U
PCB183	0.78	0.54 J	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	0.15 J	0.14 J	ND U	ND U
PCB187/182	1.11	0.74 J	ND U	ND U
PCB189	ND U	ND U	ND U	ND U
PCB191	0.08 J	ND U	ND U	ND U
PCB193	0.13 J	ND U	ND U	ND U
PCB194	0.33 J	ND U	ND U	ND U
PCB195	0.23 J	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	0.37 J	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	0.36 J	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	0.16 J	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U

Surrogate Recovery (%)				
PCB104	64	77	68	76
PCB14	53	58	66	66
PCB34	56	58	57	63
PCB112	64	82	57	71

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	C1-C	C1-D	C3-C-1	C3-D-1
Cl 1	12.98	1.65	0.00	0.00
Cl 2	365.60	22.50	0.07	0.37
Cl 3	1602.79	138.34	0.56	1.02
Cl 4	1396.66	236.47	3.82	4.59
Cl 5	347.83	108.72	3.15	3.81
Cl 6	75.43	40.20	1.56	1.46
Cl 7	10.72	7.25	0.00	0.00
Cl 8	1.29	0.00	0.00	0.00
Cl 9	0.16	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00
SUM PCB	3813.46	555.13	9.17	11.25

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: Corbicula

Client Reporting Sample ID:	C6-C-1	C6-D-1	C6-D-2
Battelle Sample ID:	W2744	W2745	W2746
Extraction Batch ID:	01-209	01-209	01-209
Batch Matrix:	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667
Sample Moisture Content (%):	24.67	27.44	22.38
Sample Dry Weight (g):	12.76	11.54	12.77
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight

PCB			
Biphenyl	1.20 J	0.95 J	1.14 J
PCB1	4.97	4.79	0.30 J
PCB3	0.41 J	0.84	ND U
PCB4/10	18.53	21.26	1.26
PCB6	0.32 J	0.94	ND U
PCB7/9	0.15 J	0.35 J	ND U
PCB8/5	1.76	6.14	0.36 J
PCB12/13	ND U	0.29 J	ND U
PCB16/32	2.47	12.91	0.69 J
PCB17	1.09	6.24	0.36 J
PCB18	1.00	3.84	0.38 J
PCB19	5.07	14.13	0.70 J
PCB21	ND U	ND U	ND U
PCB22	0.21 J	1.00	ND U
PCB24/27	1.16	5.15	0.20 J
PCB25	0.26 J	1.26	ND U
PCB26	0.48 J	3.01	ND U
PCB28	1.38	5.76	0.32 J
PCB29	ND U	ND U	ND U
PCB31	0.98	5.48	0.26 J
PCB33/20	0.22 J	1.54	0.18 J
PCB40	ND U	1.05	0.43 J
PCB41/64/71	1.30	8.52	0.32 J
PCB42	0.47 J	3.45	ND U
PCB43	ND U	ND U	ND U
PCB44	1.00	7.28	0.43 J
PCB45	0.45 J	1.81	ND U
PCB46	ND U	0.89	ND U
PCB47/75	1.11	12.35	0.43 J
PCB48	0.31 J	1.75	ND U
PCB49	1.96	17.90	0.54 J
PCB51	0.79	6.07	0.21 J
PCB52	2.14	16.99	0.66 J
PCB53	0.96	9.36	0.28 J
PCB56/60	1.05	7.24	0.21 J
PCB59	0.18 J	0.96	ND U
PCB63	ND U	0.93	ND U
PCB66	1.91	13.25	0.36 J
PCB70/76	1.32	9.95	0.29 J
PCB74	1.10	8.30	0.27 J
PCB82	ND U	1.99	ND U
PCB83	ND U	1.09	ND U
PCB84	0.65 J	4.20	ND U
PCB85	0.41 J	3.33	ND U
PCB87/115	0.50 J	6.71	ND U
PCB89	0.76	7.11	ND U
PCB91	0.55 J	4.98	ND U
PCB92	0.53 J	3.70	ND U
PCB95	1.21	14.05	0.34 J
PCB97	0.76 J	4.88	ND U
PCB99	0.93	9.70	ND U
PCB100	ND U	0.99	ND U
PCB101/90	0.94	7.97	ND U
PCB105	0.69 J	7.31	ND U
PCB107	ND U	1.86	ND U
PCB110	2.09	24.48	0.47 J
PCB114	ND U	0.49 J	ND U
PCB118	1.35	16.89	0.30 J
PCB119	ND U	1.19	ND U
PCB124	ND U	0.38 J	ND U
PCB128	ND U	3.82	ND U
PCB129	ND U	0.80	ND U
PCB130	ND U	1.29	ND U
PCB131	ND U	0.29 J	ND U
PCB132	0.45 J	5.54	ND U

Client Reporting Sample ID:	C6-C-1	C6-D-1	C6-D-2
PCB134	ND U	1.39	ND U
PCB135/144	0.29 J	3.11	ND U
PCB136	0.27 J	2.11	ND U
PCB137	ND U	1.11	ND U
PCB138/160/163	1.52	20.62	0.34 J
PCB141	ND U	2.16	ND U
PCB146	ND U	2.91	ND U
PCB149	1.13	11.62	ND U
PCB151	0.19 J	3.02	ND U
PCB153	1.04	13.33	0.18 J
PCB156	ND U	2.01	ND U
PCB158	ND U	1.46	ND U
PCB167	ND U	0.73 J	ND U
PCB169	ND U	ND U	ND U
PCB170/190	ND U	3.22	ND U
PCB171	ND U	0.75 J	ND U
PCB172	ND U	0.15 J	ND U
PCB173	ND U	ND U	ND U
PCB174	ND U	2.07	ND U
PCB175	ND U	0.16 J	ND U
PCB176	ND U	0.26 J	ND U
PCB177	ND U	1.42	ND U
PCB178	ND U	0.57 J	ND U
PCB180	ND U	3.24	ND U
PCB183	ND U	0.80 J	ND U
PCB184	ND U	ND U	ND U
PCB185	ND U	ND U	ND U
PCB187/182	0.13 J	1.85	ND U
PCB189	ND U	0.27 J	ND U
PCB191	ND U	ND U	ND U
PCB193	ND U	0.28 J	ND U
PCB194	ND U	0.65 J	ND U
PCB195	ND U	ND U	ND U
PCB197	ND U	ND U	ND U
PCB198	ND U	ND U	ND U
PCB199	ND U	0.94	ND U
PCB200	ND U	ND U	ND U
PCB201	ND U	ND U	ND U
PCB203/196	ND U	0.79 J	ND U
PCB205	ND U	ND U	ND U
PCB206	ND U	0.66	ND U
PCB207	ND U	ND U	ND U
PCB209	ND U	ND U	ND U

Surrogate Recovery (%)			
PCB104	75	67	80
PCB14	69	51	70
PCB34	62	51	64
PCB112	66	65	72

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precis
NA = Not Applicable.
J = Detected, but below the sample specific
Y = Peak area higher than the highest calib
D = Diluted sample concentration reported f

Level of Chlorination	C6-C-1	C6-D-1	C6-D-2
Cl 1	5.38	5.64	0.30
Cl 2	20.75	28.98	1.62
Cl 3	14.33	60.32	3.08
Cl 4	16.06	128.04	4.42
Cl 5	11.37	123.28	1.10
Cl 6	4.89	77.31	0.52
Cl 7	0.13	15.03	0.00
Cl 8	0.00	2.38	0.00
Cl 9	0.00	0.66	0.00
Cl 10	0.00	0.00	0.00
SUM PCB	72.91	441.64	11.05

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: corbicula

Client Reporting Sample ID:	C-0A	C-0B	C-1A	C-1B
Battelle Sample ID:	W2704	W2705	W2706	W2707
Extraction Batch ID:	01-201	01-201	01-201	01-201
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	21.36	31.78	25.58	21.55
Sample Dry Weight (g):	12.86	11.63	12.83	12.98
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.40 J	0.57 J	0.40 J	0.51 J
PCB1	ND U	ND U	0.95	1.28
PCB3	ND U	ND U	0.30 J	0.38 J
PCB4/10	0.06 J	ND U	18.57	19.13
PCB6	0.02 J	ND U	8.44	9.67
PCB7/9	ND U	ND U	4.67	5.55
PCB8/5	0.08 J	0.12 J	39.64	44.48
PCB12/13	ND U	ND U	2.22	2.57
PCB16/32	0.15 J	0.16 J	47.81	48.55
PCB17	0.09 J	0.13 J	31.55	30.19
PCB18	0.12 J	0.21 J	77.41	76.36
PCB19	ND U	ND U	10.26	7.68
PCB21	ND U	ND U	ND U	ND U
PCB22	ND U	ND U	31.08	30.28
PCB24/27	0.04 J	ND U	6.69	5.72
PCB25	ND U	ND U	6.07	5.90
PCB26	ND U	ND U	13.56	12.74
PCB28	0.22 J	0.20 J	86.02	81.47
PCB29	ND U	ND U	0.81	0.80
PCB31	0.14 J	0.25 J	71.74	72.66
PCB33/20	ND U	0.13 J	50.17	56.30
PCB40	ND U	0.34 J	6.57	6.71
PCB41/64/71	ND U	0.27 J	39.35	39.82
PCB42	0.07 J	0.14 J	16.30	16.16
PCB43	ND U	ND U	ND U	ND U
PCB44	0.13 J	0.28 J	40.72	40.45
PCB45	ND U	ND U	9.75	9.43
PCB46	ND U	ND U	4.06	3.86
PCB47/75	0.08 J	0.17 J	11.26	10.13
PCB48	0.07 J	ND U	12.86	13.24
PCB49	0.23 J	0.34 J	35.99	34.53
PCB51	ND U	ND U	2.63	2.43
PCB52	0.31 J	0.52 J	43.55	41.18
PCB53	0.06 J	ND U	8.76	8.14
PCB56/60	0.09 J	0.25 J	35.63	35.25
PCB59	0.03 J	0.07 J	3.62	3.31
PCB63	ND U	ND U	1.60	1.51
PCB66	0.20 J	0.39 J	40.63	40.26
PCB70/76	0.15 J	0.41 J	46.42	45.66
PCB74	0.10 J	0.20 J	25.78	24.33
PCB82	ND U	ND U	2.95	2.68
PCB83	ND U	ND U	1.23	0.97
PCB84	0.08 J	0.24 J	5.21	4.41
PCB85	ND U	0.20 J	3.79	3.26
PCB87/115	ND U	0.28 J	8.64	7.02
PCB89	0.09 J	0.27 J	5.56	4.80
PCB91	0.04 J	0.16 J	2.68	2.36
PCB92	0.06 J	0.13 J	2.25	1.69
PCB95	0.20 J	0.52 J	11.81	9.34
PCB97	ND U	0.26 J	5.78	4.76
PCB99	ND U	0.32 J	6.79	5.65
PCB100	ND U	0.09 J	0.10 J	0.10 J
PCB101/90	0.07 J	0.33 J	7.99	4.97
PCB105	ND U	0.29 J	6.61	5.34
PCB107	ND U	ND U	0.91	0.75
PCB110	0.34 J	0.91	17.12	12.75
PCB114	ND U	ND U	0.48 J	0.42 J
PCB118	0.11 J	0.55 J	12.26	8.57
PCB119	ND U	ND U	0.26 J	0.23 J
PCB124	ND U	ND U	0.54 J	0.38 J
PCB128	ND U	ND U	1.40	0.59 J
PCB129	ND U	ND U	0.37 J	0.22 J
PCB130	ND U	0.08 J	0.36 J	0.20 J
PCB131	ND U	ND U	0.14 J	0.09 J
PCB132	0.10 J	0.20 J	2.15	0.96

Client Reporting Sample ID:	C-0A	C-0B	C-1A	C-1B
PCB134	ND U	ND U	0.33 J	0.22 J
PCB135/144	ND U	0.12 J	0.78	0.41 J
PCB136	0.07 J	0.11 J	0.78	0.39 J
PCB137	ND U	ND U	0.40 J	0.22 J
PCB138/160/163	0.24 J	1.05	6.91	3.01
PCB141	ND U	0.14 J	0.95	0.50 J
PCB146	ND U	0.12 J	0.63 J	0.35 J
PCB149	0.18 J	0.37 J	3.36	1.65
PCB151	ND U	0.08 J	0.86	0.37 J
PCB153	0.14 J	0.56 J	3.68	1.65
PCB156	ND U	0.11 J	0.77 J	0.31 J
PCB158	ND U	0.08 J	0.71 J	0.34 J
PCB167	ND U	ND U	0.25 J	0.11 J
PCB169	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	0.75 J	0.26 J
PCB171	ND U	ND U	0.20 J	0.10 J
PCB172	ND U	ND U	0.04 J	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	0.46 J	0.19 J
PCB175	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	0.07 J	ND U
PCB177	ND U	ND U	0.28 J	0.17 J
PCB178	ND U	ND U	0.16 J	0.07 J
PCB180	ND U	0.23 J	0.94	0.44 J
PCB183	ND U	ND U	0.24 J	0.12 J
PCB184	0.06 J	0.04 J	0.07 J	0.06 J
PCB185	ND U	ND U	ND U	ND U
PCB187/182	ND U	0.14 J	0.39 J	0.22 J
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U

Surrogate Recovery (%)				
PCB104	74	77	67	64
PCB14	72	74	71	64
PCB34	67	69	66	61
PCB112	76	88	72	69

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific MDL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	C-0A	C-0B	C-1A	C-1B
Cl 1	0.00	0.00	1.25	1.66
Cl 2	0.16	0.12	73.55	81.40
Cl 3	0.78	1.07	433.17	428.66
Cl 4	1.53	3.38	385.50	376.38
Cl 5	0.98	4.54	102.96	80.45
Cl 6	0.72	3.02	24.85	11.57
Cl 7	0.06	0.40	3.59	1.62
Cl 8	0.00	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00
SUM PCB	4.64	13.11	1025.26	982.25

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Client Reporting Sample ID:	C-2A	C-2B	C3A	C-3B
Battelle Sample ID:	W2708	W2709	W2710-1	W2711
Extraction Batch ID:	01-201	01-201	01-480	01-201
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	21.98	37.97	24.88	21.19
Sample Dry Weight (g):	13.38	10.40	11.47	12.60
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	1.14 J	0.11 J	0.20 J	0.53 J
PCB1	ND U	ND U	0.16 J	ND U
PCB3	ND U	ND U	ND U	ND U
PCB4/10	ND U	ND U	0.80	0.14 J
PCB6	ND U	ND U	0.07 J	ND U
PCB7/9	ND U	ND U	0.10 J	ND U
PCB8/5	ND U	ND U	0.31 J	ND U
PCB12/13	ND U	ND U	ND U	ND U
PCB16/32	ND U	ND U	0.79	0.28 J
PCB17	ND U	ND U	0.52 J	0.22 J
PCB18	ND U	ND U	0.46 J	0.17 J
PCB19	ND U	ND U	0.71 J	0.22 J
PCB21	ND U	ND U	ND U	ND U
PCB22	ND U	ND U	0.26 J	ND U
PCB24/27	ND U	ND U	0.32 J	0.12 J
PCB25	ND U	ND U	0.14 J	ND U
PCB26	ND U	ND U	0.28 J	ND U
PCB28	0.05 J	0.11 J	1.38	0.40 J
PCB29	ND U	ND U	ND U	ND U
PCB31	0.06 J	0.10 J	0.74 J	0.32 J
PCB33/20	ND U	ND U	0.19 J	ND U
PCB40	0.26 J	0.40 J	0.88	0.25 J
PCB41/64/71	ND U	0.15 J	2.29	0.98
PCB42	ND U	ND U	0.83 J	0.32 J
PCB43	ND U	ND U	ND U	ND U
PCB44	ND U	0.11 J	2.08	0.69 J
PCB45	ND U	ND U	0.40 J	0.14 J
PCB46	ND U	ND U	0.18 J	ND U
PCB47/75	ND U	ND U	1.47	0.62 J
PCB48	ND U	ND U	ND U	ND U
PCB49	ND U	0.16 J	2.06	0.98
PCB51	ND U	ND U	0.31 J	0.07 J
PCB52	0.12 J	0.31 J	2.79	1.25
PCB53	ND U	ND U	0.60 J	0.14 J
PCB56/60	ND U	0.16 J	1.99	0.71 J
PCB59	ND U	ND U	0.26 J	0.09 J
PCB63	ND U	ND U	0.15 J	ND U
PCB66	0.12 J	0.30 J	3.03	1.31
PCB70/76	0.04 J	0.24 J	1.84	0.75 J
PCB74	ND U	0.13 J	1.77	0.76 J
PCB82	ND U	ND U	0.40 J	0.16 J
PCB83	ND U	ND U	ND U	ND U
PCB84	ND U	ND U	0.78 J	0.35 J
PCB85	ND U	ND U	0.65 J	0.29 J
PCB87/115	ND U	ND U	1.56	0.52 J
PCB89	ND U	ND U	ND U	0.51 J
PCB91	ND U	ND U	0.50 J	0.29 J
PCB92	ND U	ND U	0.58 J	0.30 J
PCB95	ND U	0.21 J	2.11	0.81
PCB97	ND U	ND U	0.98	0.38 J
PCB99	ND U	ND U	1.60	0.63 J
PCB100	0.05 J	ND U	ND U	0.08 J
PCB101/90	ND U	ND U	2.77	0.63 J
PCB105	ND U	0.11 J	1.00	0.55 J
PCB107	ND U	ND U	0.23 J	ND U
PCB110	ND U	0.40 J	3.66	1.27
PCB114	ND U	ND U	ND U	ND U
PCB118	ND U	0.25 J	2.75	1.02
PCB119	ND U	ND U	ND U	ND U
PCB124	ND U	ND U	ND U	ND U
PCB128	ND U	ND U	0.59 J	0.26 J
PCB129	ND U	ND U	ND U	ND U
PCB130	ND U	ND U	ND U	ND U
PCB131	ND U	ND U	ND U	ND U
PCB132	ND U	0.07 J	0.75 J	0.35 J

Client Reporting Sample ID:	C-2A	C-2B	C3A	C-3B
PCB134	ND U	ND U	ND U	ND U
PCB135/144	ND U	ND U	0.34 J	0.21 J
PCB136	ND U	ND U	0.35 J	0.19 J
PCB137	ND U	ND U	ND U	ND U
PCB138/160/163	ND U	ND U	3.02	1.06
PCB141	ND U	ND U	0.44 J	ND U
PCB146	ND U	ND U	0.31 J	0.21 J
PCB149	ND U	0.14 J	1.47	0.50 J
PCB151	ND U	ND U	0.41 J	0.19 J
PCB153	ND U	0.16 J	1.62	0.71 J
PCB156	ND U	ND U	0.27 J	0.15 J
PCB158	ND U	ND U	0.31 J	ND U
PCB167	ND U	ND U	ND U	0.07 J
PCB169	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	0.30 J	ND U
PCB171	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	0.24 J	ND U
PCB175	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	ND U	ND U
PCB177	ND U	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U
PCB180	ND U	ND U	0.34 J	0.20 J
PCB183	ND U	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U
PCB187/182	ND U	ND U	0.26 J	0.16 J
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U

Surrogate Recovery (%)				
PCB104	70	76	68	74
PCB14	71	68	59	68
PCB34	65	68	54	63
PCB112	73	76	67	68

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific MDL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	C-2A	C-2B	C-3A	C-3B
Cl 1	0.00	0.00	0.16	0.00
Cl 2	0.00	0.00	1.29	0.14
Cl 3	0.12	0.21	5.79	1.73
Cl 4	0.53	1.96	22.94	9.07
Cl 5	0.05	0.98	19.57	7.80
Cl 6	0.00	0.37	9.87	3.90
Cl 7	0.00	0.00	1.14	0.36
Cl 8	0.00	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00
SUM PCB	1.84	3.63	60.96	23.52

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Client Reporting Sample ID:	C-4A	C-4B	C-5A	C-5B
Battelle Sample ID:	W2712	W2713	W2714	W2715
Extraction Batch ID:	01-201	01-201	01-201	01-201
Batch Matrix:	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	60.04	41.79	36.45	50.00
Sample Dry Weight (g):	6.94	9.81	9.85	8.63
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB				
Biphenyl	0.91 J	0.06 J	0.26 J	0.40 J
PCB1	ND U	ND U	0.69 J	1.64
PCB3	ND U	ND U	0.13 J	0.18 J
PCB4/10	ND U	ND U	4.78	13.05
PCB6	ND U	ND U	0.27 J	0.73 J
PCB7/9	ND U	ND U	0.07 J	0.28 J
PCB8/5	ND U	ND U	1.51	3.52
PCB12/13	ND U	ND U	ND U	0.47 J
PCB16/32	ND U	ND U	3.13	9.87
PCB17	ND U	ND U	1.55	6.58
PCB18	ND U	ND U	1.25	7.37
PCB19	ND U	ND U	3.06	8.63
PCB21	ND U	ND U	ND U	ND U
PCB22	ND U	ND U	0.74 J	5.00
PCB24/27	ND U	ND U	1.13	3.66
PCB25	ND U	ND U	0.37 J	1.61
PCB26	ND U	ND U	0.80 J	3.82
PCB28	ND U	ND U	3.83	19.32
PCB29	ND U	ND U	ND U	ND U
PCB31	ND U	ND U	1.95	13.80
PCB33/20	ND U	ND U	0.67 J	5.45
PCB40	ND U	ND U	0.77 J	2.60
PCB41/64/71	ND U	ND U	6.64	19.93
PCB42	ND U	ND U	2.49	8.02
PCB43	ND U	ND U	ND U	ND U
PCB44	ND U	ND U	5.02	18.38
PCB45	ND U	ND U	1.10	3.47
PCB46	ND U	ND U	0.46 J	1.58
PCB47/75	ND U	ND U	4.20	12.18
PCB48	ND U	ND U	1.36	3.58
PCB49	ND U	ND U	6.19	21.40
PCB51	ND U	ND U	1.01	2.60
PCB52	ND U	ND U	6.82	24.79
PCB53	ND U	ND U	1.76	5.62
PCB56/60	ND U	ND U	5.86	19.03
PCB59	ND U	ND U	0.60 J	2.56
PCB63	ND U	ND U	0.49 J	1.50
PCB66	ND U	ND U	10.23	30.20
PCB70/76	ND U	ND U	6.48	22.05
PCB74	ND U	ND U	6.42	19.61
PCB82	ND U	ND U	1.51	4.08
PCB83	ND U	ND U	0.98	1.86
PCB84	ND U	ND U	2.26	6.61
PCB85	ND U	ND U	2.72	6.07
PCB87/115	ND U	ND U	5.90	14.40
PCB89	ND U	ND U	4.99	13.98
PCB91	ND U	ND U	1.64	4.51
PCB92	ND U	ND U	1.85	5.17
PCB95	ND U	ND U	6.25	19.25
PCB97	ND U	ND U	3.63	9.30
PCB99	ND U	ND U	5.61	14.13
PCB100	ND U	ND U	0.21 J	0.57 J
PCB101/90	ND U	ND U	5.04	12.68
PCB105	ND U	ND U	4.93	12.59
PCB107	ND U	ND U	0.78 J	2.17
PCB110	ND U	ND U	13.25	33.16
PCB114	ND U	ND U	0.52 J	0.78 J
PCB118	ND U	ND U	11.12	28.00
PCB119	ND U	ND U	0.34 J	0.72 J
PCB124	ND U	ND U	0.69 J	0.97 J
PCB128	ND U	ND U	2.14	5.61
PCB129	ND U	ND U	0.74 J	1.58
PCB130	ND U	ND U	0.86 J	1.61
PCB131	ND U	ND U	0.23 J	0.42 J
PCB132	ND U	ND U	3.01	7.28

Client Reporting Sample ID:	C-4A	C-4B	C-5A	C-5B
PCB134	ND U	ND U	0.70 J	1.70
PCB135/144	ND U	ND U	1.40	2.97
PCB136	ND U	ND U	1.10	2.28
PCB137	ND U	ND U	0.91 J	1.93
PCB138/160/163	ND U	ND U	11.01	28.16
PCB141	ND U	ND U	1.44	3.25
PCB146	ND U	ND U	1.19	2.71
PCB149	ND U	ND U	5.44	12.51
PCB151	ND U	ND U	1.21	2.94
PCB153	ND U	ND U	6.09	15.75
PCB156	ND U	ND U	1.36	3.21
PCB158	ND U	ND U	1.14	2.58
PCB167	ND U	ND U	0.39 J	1.02 J
PCB169	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	1.43	3.72
PCB171	ND U	ND U	0.43 J	0.83 J
PCB172	ND U	ND U	ND U	0.21 J
PCB173	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	0.84 J	2.19
PCB175	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	0.22 J	0.31 J
PCB177	ND U	ND U	0.60 J	1.56
PCB178	ND U	ND U	ND U	0.41 J
PCB180	ND U	ND U	1.48	4.07
PCB183	ND U	ND U	0.38 J	1.02 J
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	0.21 J
PCB187/182	ND U	ND U	0.81 J	1.87
PCB189	ND U	ND U	ND U	0.31 J
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	0.64 J
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	0.63 J
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	0.62 J
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U

Surrogate Recovery (%)				
PCB104	77	78	82	80
PCB14	71	20 &	73	72
PCB34	65	40	67	66
PCB112	64	101	71	75

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific MDL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	C-4A	C-4B	C-5A	C-5B
Cl 1	0.00	0.00	0.82	1.82
Cl 2	0.00	0.00	6.64	18.05
Cl 3	0.00	0.00	18.47	85.11
Cl 4	0.00	0.00	67.88	219.08
Cl 5	0.00	0.00	74.20	190.99
Cl 6	0.00	0.00	40.37	97.51
Cl 7	0.00	0.00	6.19	16.69
Cl 8	0.00	0.00	0.00	1.89
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00
SUM PCB	0.91	0.06	214.83	631.54

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Client Reporting Sample ID:	C-6A	C-6B
Battelle Sample ID:	W2716	W2717
Extraction Batch ID:	01-201	01-201
Batch Matrix:	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667
Sample Moisture Content (%):	21.02	21.47
Sample Dry Weight (g):	13.27	15.15
Reporting Units:	ng/g,dry weight	ng/g,dry weight
PCB		
Biphenyl	0.70 J	0.48 J
PCB1	0.05 J	1.07
PCB3	ND U	0.20 J
PCB4/10	0.22 J	ND U
PCB6	ND U	0.24 J
PCB7/9	ND U	ND U
PCB8/5	ND U	2.74
PCB12/13	ND U	0.16 J
PCB16/32	0.20 J	5.72
PCB17	ND U	3.04
PCB18	ND U	2.46
PCB19	0.26 J	3.98
PCB21	ND U	ND U
PCB22	ND U	1.63
PCB24/27	ND U	1.61
PCB25	ND U	0.46 J
PCB26	ND U	1.11
PCB28	0.17 J	7.40
PCB29	ND U	ND U
PCB31	0.13 J	2.34
PCB33/20	ND U	0.62 J
PCB40	ND U	0.64
PCB41/64/71	ND U	5.38
PCB42	ND U	1.97
PCB43	ND U	ND U
PCB44	ND U	3.98
PCB45	ND U	1.03
PCB46	ND U	0.44 J
PCB47/75	0.23 J	3.07
PCB48	ND U	0.92
PCB49	0.33 J	5.25
PCB51	ND U	1.25
PCB52	0.29 J	6.38
PCB53	ND U	2.24
PCB56/60	0.18 J	5.28
PCB59	ND U	0.60
PCB63	ND U	0.26 J
PCB66	0.28 J	6.97
PCB70/76	0.14 J	5.30
PCB74	0.13 J	5.40
PCB82	ND U	0.87
PCB83	ND U	0.46 J
PCB84	ND U	1.71
PCB85	ND U	1.07
PCB87/115	ND U	3.16
PCB89	ND U	2.30
PCB91	ND U	1.21
PCB92	ND U	0.96
PCB95	0.27 J	4.48
PCB97	ND U	1.88
PCB99	ND U	2.53
PCB100	ND U	0.11 J
PCB101/90	ND U	2.92
PCB105	ND U	2.48
PCB107	ND U	0.40 J
PCB110	0.36 J	7.97
PCB114	ND U	0.19 J
PCB118	0.15 J	5.41
PCB119	ND U	0.17 J
PCB124	ND U	0.26 J
PCB128	ND U	0.80
PCB129	ND U	0.19 J
PCB130	ND U	0.20 J
PCB131	ND U	0.08 J
PCB132	ND U	1.19

Client Reporting Sample ID:	C-6A	C-6B
PCB134	ND U	0.31 J
PCB135/144	ND U	0.51 J
PCB136	ND U	0.49 J
PCB137	ND U	0.20 J
PCB138/160/163	0.23 J	3.73
PCB141	ND U	0.50 J
PCB146	ND U	0.41 J
PCB149	ND U	2.16
PCB151	ND U	0.52 J
PCB153	0.24 J	1.91
PCB156	ND U	0.41 J
PCB158	ND U	0.44 J
PCB167	ND U	0.15 J
PCB169	ND U	ND U
PCB170/190	ND U	0.28 J
PCB171	ND U	0.09 J
PCB172	ND U	ND U
PCB173	ND U	ND U
PCB174	ND U	0.17 J
PCB175	ND U	ND U
PCB176	ND U	ND U
PCB177	ND U	0.11 J
PCB178	ND U	ND U
PCB180	ND U	0.28 J
PCB183	ND U	0.11 J
PCB184	ND U	ND U
PCB185	ND U	ND U
PCB187/182	ND U	0.15 J
PCB189	ND U	ND U
PCB191	ND U	ND U
PCB193	ND U	ND U
PCB194	ND U	ND U
PCB195	ND U	ND U
PCB197	ND U	ND U
PCB198	ND U	ND U
PCB199	ND U	ND U
PCB200	ND U	ND U
PCB201	ND U	ND U
PCB203/196	ND U	ND U
PCB205	ND U	ND U
PCB206	ND U	ND U
PCB207	ND U	ND U
PCB209	ND U	ND U

Surrogate Recovery (%)		
PCB104	84	72
PCB14	82	71
PCB34	71	66
PCB112	70	74

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific MDL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	C-6A	C-6B
Cl 1	0.05	1.26
Cl 2	0.22	3.14
Cl 3	0.76	30.36
Cl 4	1.58	56.37
Cl 5	0.77	40.54
Cl 6	0.47	14.20
Cl 7	0.00	1.18
Cl 8	0.00	0.00
Cl 9	0.00	0.00
Cl 10	0.00	0.00
SUM PCB	4.55	147.52

Battelle
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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: Empore Water

Client Reporting Sample ID:	C-0 EMPORE (1.0)	C-0 EMPORE	C-1 EMPORE	C-2 EMPORE
Battelle Sample ID:	W4290	W4292	W4294	W4296
Extraction Batch ID:	01-309	01-309	01-309	01-309
Batch Matrix:	Water	Water	Water	Water
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	NA	NA	NA	NA
Sample Volume (L):	1.00	1.00	1.00	1.00
Reporting Units:	total ng	total ng	total ng	total ng
PCB				
Biphenyl	20.67 B	10.91 B	34.18 B	12.56 B
PCB1	2.86 J	ND U	16.64	0.87 J
PCB3	1.82 J	ND U	1.98 J	0.45 J
PCB4/10	2.05 J	0.69 J	100.36	1.25 J
PCB6	3.15 J	0.43 J	8.84	0.64 J
PCB7/9	3.65 J	0.34 J	6.20	0.42 J
PCB8/5	22.28	0.70 J	34.32	4.15 J
PCB12/13	2.40 J	ND U	0.89 J	ND U
PCB16/32	23.22	0.86 J	85.30	2.46 J
PCB17	15.65	1.01 J	16.66	2.32 J
PCB18	33.19	2.55 J	53.10	5.64
PCB19	2.30 J	0.66 J	89.03	2.16 J
PCB21	66.19	ND U	ND U	ND U
PCB22	39.82	0.91 J	19.04	4.88
PCB24/27	2.80 J	0.39 J	28.12	0.89 J
PCB25	6.18	0.43 J	3.35 J	0.92 J
PCB26	12.67	0.55 J	9.26	0.57 J
PCB28	104.13	4.35 J	45.77	13.45
PCB29	0.37 J	ND U	0.76 J	ND U
PCB31	97.96	3.78 J	27.59	12.67
PCB33/20	65.44	2.54 J	17.10	8.24
PCB40	14.38	ND U	8.15	1.38 J
PCB41/64/71	110.91	3.36 J	40.21	12.65
PCB42	28.85	1.14 J	14.38	3.34 J
PCB43	ND U	ND U	ND U	ND U
PCB44	160.71	4.82 J	51.10	17.04
PCB45	8.57	ND U	18.38	1.35 J
PCB46	3.61 J	ND U	8.16	0.68 J
PCB47/75	26.52	1.11 J	10.56	3.08 J
PCB48	22.38	0.89 J	8.22	2.83 J
PCB49	107.13	3.43 J	34.81	11.97
PCB51	3.53 J	0.99 J	4.32 J	1.35 J
PCB52	306.31	10.96	69.05	34.14
PCB53	8.10	0.49 J	15.95	1.33 J
PCB56/60	70.85	2.02 J	14.56	8.31
PCB59	5.53	0.47 J	4.91	0.91 J
PCB63	4.78	ND U	1.07 J	0.51 J
PCB66	111.64	3.08 J	20.92	14.23
PCB70/76	247.41	7.14	27.05	28.92
PCB74	91.40	2.79 J	14.35	11.40
PCB82	22.14	0.93 J	2.61 J	2.74 J
PCB83	14.41	ND U	2.20 J	2.18 J
PCB84	77.37	2.61 J	9.28	7.88
PCB85	35.30	1.38 J	3.61 J	4.39 J
PCB87/115	132.75	3.72 J	9.97	18.38
PCB89	164.82	5.28	28.73	20.19
PCB91	37.13	1.30 J	4.01 J	4.14 J
PCB92	53.95	1.81 J	5.54	6.28
PCB95	269.09	8.05	29.50	27.25
PCB97	79.34	2.43 J	8.00	9.65
PCB99	114.27	3.59 J	11.73	14.30
PCB100	0.75 J	ND U	ND U	ND U
PCB101/90	204.81	5.42	36.84	22.81
PCB105	33.84	1.00 J	3.64 J	4.08 J
PCB107	7.21	0.29 J	1.21 J	1.23 J
PCB110	236.27	6.39	23.12	27.45
PCB114	3.28 J	0.53 J	0.80 J	0.85 J
PCB118	106.20	3.08 J	10.96	14.78
PCB119	2.06 J	ND U	0.64 J	0.79 J
PCB124	4.87	0.20 J	0.83 J	0.73 J
PCB128	5.98	ND U	0.97 J	0.93 J
PCB129	2.58 J	ND U	ND U	0.47 J
PCB130	3.13 J	ND U	0.50 J	0.54 J
PCB131	2.20 J	ND U	0.35 J	0.55 J
PCB132	29.48	0.98 J	2.66 J	3.50 J

Client Reporting Sample ID:	C-0 EMPORE (1.0)	C-0 EMPORE	C-1 EMPORE	C-2 EMPORE
PCB134	6.55	ND U	0.78 J	0.91 J
PCB135/144	23.16	0.89 J	2.14 J	3.03 J
PCB136	24.61	1.16 J	2.50 J	3.07 J
PCB137	3.97 J	ND U	0.52 J	0.72 J
PCB138/160/163	56.01	2.15 J	5.94	7.58
PCB141	12.77	0.46 J	1.24 J	1.85 J
PCB146	9.20	0.51 J	1.02 J	1.33 J
PCB149	82.88	2.35 J	7.57	9.82
PCB151	31.17	1.14 J	2.99 J	3.81 J
PCB153	51.91	1.71 J	5.51	7.52
PCB156	2.24 J	ND U	0.37 J	0.50 J
PCB158	6.22	0.39 J	0.81 J	1.04 J
PCB167	1.03 J	ND U	0.24 J	0.27 J
PCB169	ND U	ND U	ND U	ND U
PCB170/190	1.72 J	ND U	ND U	ND U
PCB171	1.08 J	ND U	ND U	0.13 J
PCB172	0.31 J	ND U	ND U	ND U
PCB173	0.20 J	ND U	ND U	ND U
PCB174	4.72 J	ND U	0.45 J	0.84 J
PCB175	0.41 J	ND U	ND U	ND U
PCB176	2.10 J	ND U	0.29 J	0.33 J
PCB177	2.38 J	ND U	ND U	0.42 J
PCB178	1.73 J	ND U	ND U	0.30 J
PCB180	4.68 J	ND U	ND U	0.72 J
PCB183	3.42 J	ND U	0.42 J	0.63 J
PCB184	ND U	ND U	ND U	ND U
PCB185	1.00 J	ND U	ND U	0.20 J
PCB187/182	7.15	0.27 J	0.98 J	1.04 J
PCB189	ND U	ND U	ND U	ND U
PCB191	0.27 J	ND U	ND U	ND U
PCB193	0.37 J	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	2.26 J	ND U	ND U	ND U
PCB199	1.12 J	ND U	ND U	ND U
PCB200	1.08 J	ND U	ND U	ND U
PCB201	0.88 J	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U

Surrogate Recovery (%)				
PCB104	80	75	80	66
PCB14	60	65	72	61
PCB34	62	63	69	57
PCB112	88	81	84	74

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
B= Analyte detected at level >3X RL in PB.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

LOC	C-0 EMPORE (1.0)	C-0 EMPORE	C-1 EMPORE	C-2 EMPORE
Cl 1	4.68	0.00	18.63	1.32
Cl 2	33.54	2.15	150.62	6.46
Cl 3	469.92	18.03	395.08	54.21
Cl 4	1332.62	42.68	366.14	155.42
Cl 5	1599.87	48.03	193.23	190.09
Cl 6	355.07	11.74	36.10	47.44
Cl 7	31.55	0.27	2.13	4.62
Cl 8	5.34	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00
	3853.27	133.80	1196.10	472.12

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: Empore Water

Client Reporting Sample ID:	C-3 EMPORE	C-4 EMPORE	C-5 EMPORE	C-6 EMPORE
Battelle Sample ID:	W4298	W4300	W4302	W4304
Extraction Batch ID:	01-309	01-309	01-309	01-309
Batch Matrix:	Water	Water	Water	Water
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	NA	NA	NA	NA
Sample Volume (L):	1.00	1.00	1.00	1.00
Reporting Units:	total ng	total ng	total ng	total ng
PCB				
Biphenyl	11.78 B	9.33 B	12.14 B	16.07 B
PCB1	18.64	0.53 J	33.13	109.21
PCB3	1.52 J	0.43 J	1.18 J	5.96
PCB4/10	111.85	1.05 J	107.86	410.87
PCB6	4.42 J	0.44 J	1.44 J	4.86
PCB7/9	1.69 J	0.22 J	0.29 J	1.66 J
PCB8/5	25.02	1.64 J	10.62	26.59
PCB12/13	1.47 J	ND U	ND U	1.10 J
PCB16/32	32.04	1.95 J	12.78	32.14
PCB17	20.62	0.98 J	7.26	19.79
PCB18	29.52	3.02 J	9.50	20.34
PCB19	45.19	0.51 J	34.09	119.65
PCB21	ND U	ND U	ND U	ND U
PCB22	12.15	1.30 J	3.69 J	9.46
PCB24/27	12.56	0.43 J	8.16	25.40
PCB25	3.09 J	ND U	1.19 J	3.21 J
PCB26	8.23	0.78 J	2.79 J	10.88
PCB28	45.29	3.83 J	14.37	34.96
PCB29	ND U	ND U	ND U	ND U
PCB31	34.01	3.61 J	11.09	29.59
PCB33/20	13.67	2.42 J	4.28 J	14.43
PCB40	6.92	ND U	1.95 J	3.91 J
PCB41/64/71	42.81	2.96 J	14.57	35.25
PCB42	13.11	1.09 J	4.12 J	9.19
PCB43	ND U	ND U	ND U	ND U
PCB44	45.63	4.01 J	13.34	36.52
PCB45	8.75	0.57 J	2.87 J	4.57
PCB46	3.63 J	0.29 J	0.96 J	1.73 J
PCB47/75	16.07	1.19 J	6.12	18.20
PCB48	8.99	0.74 J	2.82 J	6.95
PCB49	37.94	2.69 J	13.25	38.81
PCB51	4.40 J	1.24 J	2.58 J	9.54
PCB52	74.40	8.98	23.33	76.13
PCB53	11.49	0.59 J	5.50	15.95
PCB56/60	30.67	1.65 J	7.85	21.23
PCB59	3.91 J	0.51 J	1.49 J	2.80 J
PCB63	2.36 J	0.08 J	1.36 J	2.01 J
PCB66	45.22	2.67 J	12.84	34.73
PCB70/76	55.00	4.48 J	13.66	57.79
PCB74	31.25	1.73 J	8.94	27.03
PCB82	6.24	1.06 J	1.72 J	5.07
PCB83	4.61	ND U	ND U	4.16 J
PCB84	18.38	2.13 J	3.95 J	15.08
PCB85	9.58	1.20 J	2.35 J	8.87
PCB87/115	32.66	3.57 J	6.70	33.49
PCB89	35.97	3.35 J	8.71	35.12
PCB91	9.00	0.85 J	2.40 J	9.43
PCB92	12.01	1.03 J	2.79 J	13.48
PCB95	56.17	6.44	12.86	53.70
PCB97	19.70	2.01 J	4.86 J	18.69
PCB99	28.48	2.11 J	6.50	29.09
PCB100	0.40 J	ND U	ND U	0.67 J
PCB101/90	37.31	3.22 J	5.96	38.83
PCB105	10.56	1.00 J	3.29 J	9.41
PCB107	2.90 J	ND U	0.82 J	2.17 J
PCB110	61.37	5.51	14.75	58.34
PCB114	1.56 J	0.62 J	1.01 J	1.41 J
PCB118	36.31	2.54 J	8.38	32.20
PCB119	0.78 J	ND U	ND U	1.33 J
PCB124	1.21 J	ND U	0.66 J	1.25 J
PCB128	2.27 J	0.25 J	0.88 J	2.15 J
PCB129	1.24 J	ND U	0.50 J	0.89 J
PCB130	1.26 J	0.32 J	0.38 J	1.09 J
PCB131	0.52 J	ND U	ND U	0.73 J
PCB132	7.83	0.87 J	2.13 J	7.32

Client Reporting Sample ID:	C-3 EMPORE	C-4 EMPORE	C-5 EMPORE	C-6 EMPORE
PCB134	1.66 J	0.32 J	0.48 J	1.75 J
PCB135/144	5.45	0.78 J	1.34 J	4.07 J
PCB136	5.73	0.91 J	1.48 J	5.12
PCB137	1.37 J	ND U	0.53 J	1.22 J
PCB138/160/163	18.17	2.09 J	5.77	18.28
PCB141	3.72 J	0.39 J	0.94 J	3.65 J
PCB146	2.62 J	0.32 J	0.81 J	3.02 J
PCB149	20.35	2.29 J	4.76 J	20.15
PCB151	6.83	0.91 J	1.87 J	7.22
PCB153	14.91	1.30 J	4.11 J	15.78
PCB156	1.10 J	ND U	0.31 J	0.95 J
PCB158	2.05 J	0.75 J	1.06 J	1.91 J
PCB167	0.54 J	ND U	ND U	0.49 J
PCB169	ND U	ND U	ND U	ND U
PCB170/190	1.05 J	ND U	ND U	0.76 J
PCB171	0.37 J	ND U	ND U	0.50 J
PCB172	ND U	ND U	ND U	0.11 J
PCB173	ND U	ND U	ND U	ND U
PCB174	1.47 J	ND U	ND U	1.34 J
PCB175	1.93 J	ND U	ND U	ND U
PCB176	0.62 J	ND U	0.18 J	0.55 J
PCB177	0.68 J	ND U	ND U	0.95 J
PCB178	0.74 J	ND U	ND U	0.67 J
PCB180	1.63 J	ND U	0.70 J	1.75 J
PCB183	1.24 J	0.13 J	0.30 J	1.22 J
PCB184	ND U	ND U	ND U	ND U
PCB185	0.66 J	ND U	ND U	0.52 J
PCB187/182	1.98 J	0.27 J	0.67 J	2.22 J
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	0.29 J	ND U
PCB193	ND U	ND U	ND U	0.10 J
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	0.61 J
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U

Surrogate Recovery (%)				
PCB104	74	83	77	79
PCB14	60	76	68	67
PCB34	58	73	65	68
PCB112	111	98	93	92

U = Analyte not detected, "ND" rep
& = QC value outside the accuracy
B= Analyte detected at level >3X F
NA = Not Applicable.
J = Detected, but below the sampl
Y = Peak area higher than the high
D = Diluted sample concentration r

LOC	C-3 EMPORE	C-4 EMPORE	C-5 EMPORE	C-6 EMPORE
Cl 1	20.16	0.96	34.31	115.17
Cl 2	144.46	3.34	120.21	445.08
Cl 3	256.38	18.83	109.22	319.86
Cl 4	442.56	35.47	137.57	402.36
Cl 5	385.19	36.64	87.70	371.80
Cl 6	97.60	11.50	27.34	95.80
Cl 7	12.36	0.40	2.14	10.69
Cl 8	0.00	0.00	0.00	0.61
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00
	1370.50	116.48	530.63	1777.44

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: Empore Water

Client Reporting Sample ID:	BLANK 1 EMPORE	BLANK 2 EMPORE	BLANK 3 EMPORE	T-0 EMPORE	T-L EMPORE
Battelle Sample ID:	W4308	W4310	W4306	W4316	W4318
Extraction Batch ID:	01-309	01-309	01-309	01-309	01-309
Batch Matrix:	Water	Water	Water	Water	Water
Sample Dilution Factor:	1.667	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	NA	NA	NA	NA	NA
Sample Volume (L):	1.00	1.00	1.00	1.00	1.00
Reporting Units:	total ng	total ng	total ng	total ng	total ng
PCB					
Biphenyl	12.31 B	13.36 B	11.64 B	10.51 B	17.05 B
PCB1	0.79 J	1.05 J	0.77 J	11.77	1.09 J
PCB3	0.52 J	0.46 J	0.38 J	2.70 J	0.65 J
PCB4/10	1.85 J	2.83 J	0.79 J	507.24	257.16
PCB6	0.99 J	0.73 J	0.58 J	1.74 J	0.66 J
PCB7/9	0.51 J	0.40 J	0.30 J	1.23 J	0.46 J
PCB8/5	5.11	3.37 J	2.78 J	32.69	6.96
PCB12/13	ND U	ND U	ND U	0.87 J	ND U
PCB16/32	4.18 J	3.56 J	2.30 J	50.24	7.36
PCB17	2.36 J	2.09 J	1.58 J	32.80	22.38
PCB18	6.60	4.98 J	3.80 J	24.70	19.58
PCB19	0.54 J	1.36 J	0.43 J	173.20	98.47
PCB21	ND U	ND U	ND U	ND U	ND U
PCB22	4.09 J	3.49 J	1.71 J	4.41 J	2.15 J
PCB24/27	0.62 J	0.70 J	0.32 J	41.12	23.36
PCB25	0.83 J	0.75 J	0.45 J	3.42 J	1.96 J
PCB26	1.62 J	1.34 J	1.56 J	10.32	5.84
PCB28	10.95	9.96	10.13	20.39	17.14
PCB29	ND U	ND U	ND U	ND U	ND U
PCB31	10.85	9.36	9.46	21.90	17.70
PCB33/20	7.46	6.02	6.25	7.02	6.54
PCB40	1.60 J	1.00 J	1.05 J	3.27 J	2.19 J
PCB41/64/71	11.32	9.38	10.29	22.55	15.85
PCB42	3.09 J	2.52 J	2.45 J	6.99	4.58 J
PCB43	ND U	ND U	ND U	ND U	ND U
PCB44	15.37	13.12	13.47	20.85	16.82
PCB45	1.17 J	0.96 J	0.64 J	5.91	3.65 J
PCB46	0.58 J	ND U	ND U	1.77 J	1.48 J
PCB47/75	2.64 J	2.25 J	2.51 J	20.26	12.53
PCB48	2.38 J	2.31 J	2.11 J	4.32 J	2.60 J
PCB49	10.35	9.72	10.11	33.91	23.90
PCB51	1.25 J	1.16 J	1.20 J	14.91	6.42
PCB52	30.18	26.94	28.94	46.90	40.03
PCB53	1.15 J	1.02 J	0.74 J	29.21	16.59
PCB56/60	6.78	6.19	7.15	9.07	6.54
PCB59	0.64 J	0.75 J	0.62 J	2.41 J	1.72 J
PCB63	0.49 J	0.69 J	0.53 J	1.09 J	0.80 J
PCB66	11.00	10.54	11.96	15.38	11.65
PCB70/76	23.00	22.04	25.40	18.99	17.32
PCB74	8.61	8.77	9.79	11.61	8.91
PCB82	2.30 J	2.07 J	2.69 J	1.80 J	1.27 J
PCB83	2.43 J	1.90 J	2.35 J	1.93 J	1.98 J
PCB84	7.21	6.14	7.00	6.21	5.78
PCB85	3.52 J	3.35 J	3.98 J	2.58 J	2.26 J
PCB87/115	11.94	11.51	14.95	10.26	7.40
PCB89	17.19	15.10	17.09	10.61	10.15
PCB91	3.67 J	3.36 J	3.71 J	5.10	3.70 J
PCB92	5.39	5.07	5.95	5.22	4.24 J
PCB95	24.08	21.40	24.71	23.24	20.13
PCB97	8.04	7.01	8.74	5.80	5.34
PCB99	11.51	11.23	6.93	9.54	8.54
PCB100	0.24 J	ND U	ND U	0.80 J	0.57 J
PCB101/90	17.49	16.67	20.47	11.00	11.92
PCB105	3.52 J	3.29 J	4.29 J	3.92 J	2.11 J
PCB107	0.99 J	1.04 J	1.13 J	1.13 J	0.76 J
PCB110	22.40	20.49	24.54	22.65	16.93
PCB114	0.91 J	0.69 J	0.85 J	0.45 J	0.73 J
PCB118	12.10	11.36	14.34	10.15	6.93
PCB119	0.50 J	0.56 J	0.44 J	0.86 J	0.78 J
PCB124	0.74 J	0.60 J	0.74 J	0.50 J	0.31 J
PCB128	0.90 J	0.97 J	0.97 J	0.86 J	0.44 J
PCB129	0.49 J	0.46 J	0.67 J	0.29 J	ND U
PCB130	0.37 J	0.84 J	0.75 J	0.60 J	ND U
PCB131	0.53 J	0.34 J	0.25 J	ND U	ND U
PCB132	3.39 J	2.88 J	3.28 J	2.77 J	2.23 J

Client Reporting Sample ID:	BLANK 1 EMPORE	BLANK 2 EMPORE	BLANK 3 EMPORE	T-0 EMPORE	T-L EMPORE
PCB134	1.10 J	0.62 J	0.99 J	0.58 J	0.71 J
PCB135/144	2.74 J	2.30 J	2.73 J	1.89 J	1.75 J
PCB136	2.72 J	2.45 J	2.70 J	2.10 J	2.00 J
PCB137	0.49 J	0.53 J	0.79 J	0.42 J	0.66 J
PCB138/160/163	7.05	6.91	8.13	7.90	4.74 J
PCB141	1.59 J	1.57 J	2.12 J	1.26 J	1.13 J
PCB146	1.20 J	1.08 J	1.46 J	1.24 J	0.82 J
PCB149	8.75	8.23	9.57	7.51	5.82
PCB151	3.31 J	2.98 J	3.49 J	2.28 J	2.05 J
PCB153	6.30	6.05	7.63	5.83	4.19 J
PCB156	0.30 J	0.31 J	0.31 J	0.46 J	ND U
PCB158	0.77 J	0.75 J	0.99 J	0.71 J	0.55 J
PCB167	0.21 J	0.27 J	0.69 J	0.24 J	ND U
PCB169	ND U	ND U	ND U	ND U	ND U
PCB170/190	0.33 J	ND U	0.43 J	ND U	ND U
PCB171	0.27 J	0.29 J	0.22 J	ND U	ND U
PCB172	ND U	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U	ND U
PCB174	0.65 J	0.74 J	0.78 J	0.82 J	ND U
PCB175	0.12 J	ND U	ND U	ND U	ND U
PCB176	0.31 J	0.32 J	0.52 J	ND U	ND U
PCB177	0.30 J	0.38 J	0.51 J	0.43 J	ND U
PCB178	0.32 J	0.34 J	0.31 J	ND U	ND U
PCB180	0.79 J	0.97 J	0.91 J	0.60 J	0.56 J
PCB183	0.58 J	0.44 J	0.68 J	0.61 J	0.58 J
PCB184	ND U	ND U	ND U	ND U	ND U
PCB185	0.30 J	0.25 J	0.41 J	ND U	ND U
PCB187/182	1.06 J	1.03 J	1.17 J	0.75 J	0.85 J
PCB189	ND U	ND U	ND U	ND U	ND U
PCB191	0.13 J	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U	ND U
				1391.08	823.92

Surrogate Recovery (%)					
PCB104	76	85	86	56	75
PCB14	68	76	78	54	74
PCB34	66	73	75	49	68
PCB112	86	93	98	56	76

U = Analyte not detected, "ND" rep
& = QC value outside the accuracy
B= Analyte detected at level >3X F
NA = Not Applicable.
J = Detected, but below the sampl
Y = Peak area higher than the high
D = Diluted sample concentration r

LOC	BLANK 1 EMPORE	BLANK 2 EMPORE	BLANK 3 EMPORE	T-0 EMPORE	T-L EMPORE
Cl 1	1.31	1.51	1.16	14.48	1.73
Cl 2	8.46	7.35	4.45	543.77	265.24
Cl 3	50.11	43.60	38.00	389.52	222.47
Cl 4	131.59	119.35	128.98	269.40	193.57
Cl 5	156.17	142.84	164.89	133.74	111.82
Cl 6	42.22	39.54	47.54	36.95	27.09
Cl 7	5.16	4.78	5.94	3.22	1.99
Cl 8	0.00	0.00	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00	0.00
	407.33	372.32	402.59	1401.59	840.97

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Client Reporting Sample ID:	C-0 GLASS FIBER (1.0)	C-0 GLASS FIBER (.7)	C-1 GLASS FIBER	C-2 GLASS FIBER
Battelle Sample ID:	W4289	W4291	W4293	W4295
Extraction Batch ID:	01-308	01-308	01-308	01-308
Batch Matrix:	Water	Water	Water	Water
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	NA	NA	NA	NA
Sample Volume (L):	1.00	1.00	1.00	1.00
Reporting Units:	total ng	total ng	total ng	total ng
PCB				
Biphenyl	5.06 J	7.24 J	5.62 J	6.37 J
PCB1	ND U	ND U	ND U	ND U
PCB3	0.20 J	ND U	ND U	ND U
PCB4/10	0.29 J	ND U	0.60 J	ND U
PCB6	0.32 J	ND U	ND U	ND U
PCB7/9	0.25 J	ND U	ND U	ND U
PCB8/5	0.32 J	ND U	ND U	ND U
PCB12/13	0.40 J	ND U	ND U	ND U
PCB16/32	0.35 J	ND U	1.41 J	ND U
PCB17	0.43 J	ND U	0.40 J	ND U
PCB18	0.55 J	ND U	1.12 J	ND U
PCB19	0.33 J	ND U	1.49 J	ND U
PCB21	ND U	ND U	ND U	ND U
PCB22	0.16 J	ND U	ND U	ND U
PCB24/27	0.31 J	ND U	0.81 J	ND U
PCB25	0.30 J	ND U	ND U	ND U
PCB26	0.30 J	ND U	ND U	ND U
PCB28	0.23 J	ND U	1.31 J	ND U
PCB29	ND U	ND U	ND U	ND U
PCB31	0.29 J	ND U	0.78 J	ND U
PCB33/20	ND U	ND U	ND U	ND U
PCB40	ND U	ND U	ND U	ND U
PCB41/64/71	ND U	ND U	2.59 J	ND U
PCB42	0.29 J	ND U	0.95 J	ND U
PCB43	0.21 J	ND U	ND U	ND U
PCB44	0.46 J	ND U	3.26 J	ND U
PCB45	ND U	ND U	1.03 J	ND U
PCB46	0.19 J	ND U	0.73 J	ND U
PCB47/75	0.88 J	ND U	0.95 J	ND U
PCB48	0.38 J	ND U	0.47 J	ND U
PCB49	0.57 J	ND U	1.85 J	ND U
PCB51	1.03 J	0.90 J	1.46 J	1.12 J
PCB52	1.75 J	1.63 J	4.02 J	1.35 J
PCB53	0.19 J	ND U	1.22 J	ND U
PCB56/60	0.32 J	ND U	1.29 J	ND U
PCB59	0.42 J	ND U	0.43 J	ND U
PCB63	0.25 J	ND U	ND U	ND U
PCB66	0.39 J	0.42 J	1.74 J	0.39 J
PCB70/76	0.52 J	ND U	0.97 J	0.25 J
PCB74	0.37 J	ND U	0.67 J	ND U
PCB82	ND U	ND U	ND U	ND U
PCB83	ND U	ND U	ND U	ND U
PCB84	0.46 J	ND U	0.78 J	ND U
PCB85	ND U	ND U	ND U	ND U
PCB87/115	0.83 J	ND U	0.98 J	ND U
PCB89	0.20 J	ND U	0.85 J	ND U
PCB91	ND U	ND U	0.35 J	ND U
PCB92	0.31 J	ND U	0.38 J	ND U
PCB95	0.72 J	ND U	1.49 J	0.50 J
PCB97	ND U	ND U	ND U	ND U
PCB99	ND U	ND U	0.67 J	ND U
PCB100	0.23 J	ND U	ND U	ND U
PCB101/90	0.90 J	ND U	0.43 J	ND U
PCB105	ND U	ND U	0.56 J	ND U
PCB107	ND U	ND U	ND U	ND U
PCB110	0.59 J	ND U	1.31 J	ND U
PCB114	0.38 J	ND U	ND U	ND U
PCB118	ND U	ND U	0.67 J	ND U
PCB119	ND U	ND U	ND U	ND U
PCB124	ND U	ND U	ND U	ND U
PCB128	ND U	ND U	ND U	ND U
PCB129	ND U	ND U	ND U	ND U
PCB130	ND U	ND U	ND U	ND U
PCB131	ND U	ND U	ND U	ND U
PCB132	0.21 J	ND U	0.39 J	ND U

Client Reporting Sample ID:	C-0 GLASS FIBER (1.0)	C-0 GLASS FIBER (.7)	C-1 GLASS FIBER	C-2 GLASS FIBER
PCB134	ND U	ND U	ND U	ND U
PCB135/144	ND U	ND U	ND U	ND U
PCB136	0.48 J	ND U	0.44 J	ND U
PCB137	ND U	ND U	ND U	ND U
PCB138/160/163	ND U	ND U	0.62 J	ND U
PCB141	ND U	ND U	ND U	ND U
PCB146	ND U	ND U	ND U	ND U
PCB149	0.28 J	ND U	0.39 J	ND U
PCB151	ND U	ND U	ND U	ND U
PCB153	0.14 J	ND U	0.62 J	ND U
PCB156	ND U	ND U	ND U	ND U
PCB158	ND U	0.33 J	0.48 J	0.37 J
PCB167	ND U	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	ND U	ND U
PCB171	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	ND U	ND U
PCB175	ND U	ND U	ND U	ND U
PCB176	0.18 J	ND U	ND U	ND U
PCB177	ND U	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U
PCB180	ND U	ND U	ND U	ND U
PCB183	ND U	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U
PCB187/182	ND U	ND U	ND U	ND U
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U

Surrogate Recovery (%)				
PCB104	73	77	72	77
PCB14	67	73	69	74
PCB34	65	69	65	69
PCB112	73	77	72	75

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	C-0 GLASS FIBER (1.0)	C-0 GLASS FIBER (.7)	C-1 GLASS FIBER	C-2 GLASS FIBER
Cl 1	0.20	0.00	0.00	0.00
Cl 2	1.58	0.00	0.60	0.00
Cl 3	3.25	0.00	7.31	0.00
Cl 4	8.21	2.95	23.63	3.10
Cl 5	4.63	0.00	8.46	0.50
Cl 6	1.12	0.33	2.93	0.37
Cl 7	0.18	0.00	0.00	0.00
Cl 8	0.00	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00
SUM PCB	24.23	10.53	48.54	10.35

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Client Reporting Sample ID:	C-3 GLASS FIBER	C-4 GLASS FIBER	C-5 GLASS FIBER	C-6 GLASS FIBER
Battelle Sample ID:	W4297	W4299	W4301	W4303
Extraction Batch ID:	01-308	01-308	01-308	01-308
Batch Matrix:	Water	Water	Water	Water
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	NA	NA	NA	NA
Sample Volume (L):	1.00	1.00	1.00	1.00
Reporting Units:	total ng	total ng	total ng	total ng
PCB				
Biphenyl	7.27 J	5.01 J	5.99 J	4.88 J
PCB1	ND U	ND U	ND U	0.92 J
PCB3	ND U	ND U	ND U	ND U
PCB4/10	1.48 J	ND U	1.63 J	4.49 J
PCB6	0.18 J	ND U	0.13 J	0.26 J
PCB7/9	ND U	ND U	ND U	ND U
PCB8/5	0.28 J	ND U	0.39 J	0.72 J
PCB12/13	ND U	ND U	ND U	ND U
PCB16/32	1.30 J	ND U	0.59 J	1.62 J
PCB17	1.33 J	ND U	0.64 J	1.02 J
PCB18	1.43 J	ND U	0.55 J	0.89 J
PCB19	1.69 J	ND U	1.40 J	3.11 J
PCB21	ND U	ND U	ND U	ND U
PCB22	ND U	ND U	ND U	ND U
PCB24/27	0.77 J	ND U	0.51 J	0.82 J
PCB25	ND U	ND U	ND U	0.25 J
PCB26	0.58 J	ND U	ND U	0.47 J
PCB28	2.43 J	ND U	1.37 J	0.62 J
PCB29	ND U	ND U	ND U	ND U
PCB31	1.50 J	ND U	0.75 J	0.84 J
PCB33/20	0.44 J	ND U	ND U	ND U
PCB40	ND U	ND U	ND U	ND U
PCB41/64/71	3.93 J	ND U	1.41 J	1.30 J
PCB42	1.78 J	ND U	0.93 J	0.54 J
PCB43	ND U	ND U	ND U	ND U
PCB44	3.11 J	ND U	1.34 J	0.87 J
PCB45	ND U	ND U	ND U	ND U
PCB46	ND U	ND U	ND U	ND U
PCB47/75	2.15 J	ND U	0.88 J	1.04 J
PCB48	1.58 J	ND U	0.57 J	0.33 J
PCB49	2.92 J	ND U	1.45 J	1.37 J
PCB51	1.37 J	0.63 J	0.90 J	0.87 J
PCB52	5.97	1.02 J	2.73 J	2.58 J
PCB53	1.18 J	ND U	0.83 J	0.89 J
PCB56/60	2.46 J	ND U	1.43 J	0.96 J
PCB59	0.68 J	ND U	0.31 J	0.24 J
PCB63	ND U	ND U	ND U	ND U
PCB66	4.22 J	ND U	2.16 J	1.53 J
PCB70/76	2.66 J	ND U	1.39 J	1.37 J
PCB74	2.71 J	ND U	1.38 J	0.95 J
PCB82	0.70 J	ND U	ND U	ND U
PCB83	ND U	ND U	ND U	ND U
PCB84	1.47 J	ND U	0.63 J	0.43 J
PCB85	0.88 J	ND U	ND U	ND U
PCB87/115	1.38 J	ND U	1.04 J	1.61 J
PCB89	1.65 J	ND U	0.82 J	1.93 J
PCB91	0.56 J	ND U	ND U	0.71 J
PCB92	1.14 J	ND U	0.45 J	0.55 J
PCB95	3.08 J	ND U	1.62 J	1.62 J
PCB97	1.12 J	ND U	0.62 J	ND U
PCB99	1.91 J	ND U	ND U	0.71 J
PCB100	ND U	ND U	ND U	ND U
PCB101/90	1.55 J	ND U	0.73 J	1.54 J
PCB105	1.07 J	ND U	0.70 J	0.34 J
PCB107	ND U	ND U	ND U	ND U
PCB110	4.49 J	ND U	1.79 J	2.12 J
PCB114	ND U	ND U	ND U	ND U
PCB118	2.50 J	ND U	1.46 J	1.35 J
PCB119	ND U	ND U	ND U	ND U
PCB124	ND U	ND U	ND U	ND U
PCB128	ND U	ND U	ND U	ND U
PCB129	ND U	ND U	ND U	ND U
PCB130	ND U	ND U	ND U	ND U
PCB131	ND U	ND U	ND U	ND U
PCB132	1.17 J	ND U	0.78 J	0.64 J

Client Reporting Sample ID:	C-3 GLASS FIBER	C-4 GLASS FIBER	C-5 GLASS FIBER	C-6 GLASS FIBER
PCB134	ND U	ND U	ND U	ND U
PCB135/144	ND U	ND U	ND U	ND U
PCB136	0.89 J	ND U	ND U	0.63 J
PCB137	ND U	ND U	ND U	ND U
PCB138/160/163	2.41 J	ND U	1.36 J	1.59 J
PCB141	ND U	ND U	ND U	ND U
PCB146	ND U	ND U	ND U	0.35 J
PCB149	1.07 J	ND U	0.67 J	0.96 J
PCB151	ND U	ND U	ND U	ND U
PCB153	1.48 J	ND U	0.81 J	1.09 J
PCB156	ND U	ND U	ND U	ND U
PCB158	0.44 J	ND U	ND U	ND U
PCB167	ND U	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	ND U	ND U
PCB171	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	ND U	ND U
PCB175	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	ND U	ND U
PCB177	ND U	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U
PCB180	ND U	ND U	ND U	ND U
PCB183	ND U	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U
PCB187/182	ND U	ND U	ND U	ND U
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U

Surrogate Recovery (%)				
PCB104	78	59	63	60
PCB14	76	60	65	63
PCB34	70	51	54	50
PCB112	70	36 &	36 &	29 &

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or pre
NA = Not Applicable.
J = Detected, but below the sample specif
Y = Peak area higher than the highest cali
D = Diluted sample concentration reportec

Level of Chlorination	C-3 GLASS FIBER	C-4 GLASS FIBER	C-5 GLASS FIBER	C-6 GLASS FIBER
Cl 1	0.00	0.00	0.00	0.92
Cl 2	1.95	0.00	2.15	5.47
Cl 3	11.47	0.00	5.81	9.64
Cl 4	36.69	1.65	17.71	14.83
Cl 5	23.51	0.00	9.88	12.91
Cl 6	7.46	0.00	3.62	5.27
Cl 7	0.00	0.00	0.00	0.00
Cl 8	0.00	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00
SUM PCB	88.35	6.66	45.17	53.92

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PCB DATA - Filters

Project Name: Lake Hartwell
Project Number: G482801-UC21

Client Reporting Sample ID:	BLANK 3 GLASS FIBER	BLANK 1 GLASS FIBER	BLANK 2 GLASS FIBER	T-0 GLASS FIBER
Battelle Sample ID:	W4305	W4307	W4309	W4315
Extraction Batch ID:	01-308	01-308	01-308	01-308
Batch Matrix:	Water	Water	Water	Water
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	NA	NA	NA	NA
Sample Volume (L):	1.00	1.00	1.00	1.00
Reporting Units:	total ng	total ng	total ng	total ng
PCB				
Biphenyl	7.03 J	3.92 J	5.89 J	8.45
PCB1	ND U	ND U	ND U	3.57 J
PCB3	ND U	ND U	ND U	0.66 J
PCB4/10	ND U	ND U	ND U	38.71
PCB6	ND U	ND U	ND U	0.71 J
PCB7/9	ND U	ND U	ND U	ND U
PCB8/5	ND U	ND U	ND U	5.18
PCB12/13	ND U	ND U	ND U	ND U
PCB16/32	ND U	ND U	ND U	13.51
PCB17	ND U	ND U	ND U	8.92
PCB18	ND U	ND U	ND U	5.66
PCB19	ND U	ND U	ND U	30.21
PCB21	ND U	ND U	ND U	ND U
PCB22	ND U	ND U	ND U	1.43 J
PCB24/27	ND U	ND U	ND U	10.11
PCB25	ND U	ND U	ND U	1.60 J
PCB26	ND U	ND U	ND U	3.78 J
PCB28	ND U	ND U	ND U	7.64
PCB29	ND U	ND U	ND U	ND U
PCB31	ND U	ND U	ND U	7.31
PCB33/20	ND U	ND U	ND U	1.66 J
PCB40	ND U	ND U	ND U	ND U
PCB41/64/71	ND U	ND U	ND U	11.92
PCB42	ND U	ND U	ND U	2.78 J
PCB43	ND U	ND U	ND U	ND U
PCB44	ND U	ND U	ND U	9.44
PCB45	ND U	ND U	ND U	2.01 J
PCB46	ND U	ND U	ND U	1.10 J
PCB47/75	ND U	ND U	ND U	12.07
PCB48	ND U	ND U	ND U	2.77 J
PCB49	ND U	ND U	ND U	16.15
PCB51	0.68 J	0.98 J	0.77 J	7.72
PCB52	0.62 J	1.35 J	0.99 J	19.51
PCB53	ND U	ND U	ND U	12.17
PCB56/60	ND U	ND U	ND U	6.22
PCB59	ND U	ND U	ND U	1.33 J
PCB63	ND U	ND U	ND U	0.60 J
PCB66	ND U	ND U	0.28 J	11.21
PCB70/76	ND U	ND U	ND U	9.00
PCB74	ND U	ND U	ND U	7.08
PCB82	ND U	ND U	ND U	1.98 J
PCB83	ND U	ND U	ND U	2.25 J
PCB84	ND U	ND U	ND U	4.05 J
PCB85	ND U	ND U	ND U	2.52 J
PCB87/115	0.85 J	ND U	ND U	3.21 J
PCB89	ND U	ND U	ND U	5.66
PCB91	ND U	ND U	ND U	4.08 J
PCB92	ND U	ND U	ND U	3.06 J
PCB95	ND U	ND U	ND U	13.26
PCB97	ND U	ND U	ND U	3.02 J
PCB99	ND U	ND U	ND U	5.81
PCB100	ND U	ND U	ND U	1.02 J
PCB101/90	ND U	ND U	ND U	7.10
PCB105	ND U	ND U	ND U	2.97 J
PCB107	ND U	ND U	ND U	1.26 J
PCB110	ND U	ND U	ND U	16.36
PCB114	ND U	ND U	ND U	ND U
PCB118	ND U	ND U	ND U	8.36
PCB119	ND U	ND U	ND U	0.81 J
PCB124	ND U	ND U	ND U	ND U
PCB128	ND U	ND U	ND U	1.51 J
PCB129	ND U	ND U	ND U	ND U
PCB130	ND U	ND U	ND U	0.95 J
PCB131	ND U	ND U	ND U	ND U
PCB132	ND U	ND U	ND U	3.11 J

Client Reporting Sample ID:	BLANK 3 GLASS FIBER	BLANK 1 GLASS FIBER	BLANK 2 GLASS FIBER	T-0 GLASS FIBER
PCB134	ND U	ND U	ND U	ND U
PCB135/144	ND U	ND U	ND U	2.01 J
PCB136	ND U	ND U	ND U	1.99 J
PCB137	ND U	ND U	ND U	0.52 J
PCB138/160/163	ND U	ND U	ND U	8.80
PCB141	ND U	ND U	ND U	1.38 J
PCB146	ND U	ND U	ND U	1.81 J
PCB149	ND U	ND U	ND U	6.34
PCB151	ND U	ND U	ND U	2.93 J
PCB153	ND U	ND U	ND U	5.87
PCB156	ND U	ND U	ND U	ND U
PCB158	ND U	ND U	ND U	0.55 J
PCB167	ND U	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	ND U	ND U
PCB171	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	ND U	ND U
PCB175	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	ND U	ND U
PCB177	ND U	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U
PCB180	ND U	ND U	ND U	ND U
PCB183	ND U	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U
PCB187/182	ND U	ND U	ND U	ND U
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U

Surrogate Recovery (%)				
PCB104	64	71	60	80
PCB14	64	72	69	69
PCB34	52	59	47	61
PCB112	32 &	39 &	22 &	63

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or prec
NA = Not Applicable.
J = Detected, but below the sample specif
Y = Peak area higher than the highest cali
D = Diluted sample concentration reportec

Level of Chlorination	BLANK 3 GLASS FIBER	BLANK 1 GLASS FIBER	BLANK 2 GLASS FIBER	T-0 GLASS FIBER
Cl 1	0.00	0.00	0.00	4.22
Cl 2	0.00	0.00	0.00	44.59
Cl 3	0.00	0.00	0.00	91.82
Cl 4	1.29	2.33	2.05	133.06
Cl 5	0.85	0.00	0.00	86.78
Cl 6	0.00	0.00	0.00	37.77
Cl 7	0.00	0.00	0.00	0.00
Cl 8	0.00	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00
SUM PCB	9.17	6.24	7.93	406.68

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Client Reporting Sample ID:	GLASS FIBER T-L
Battelle Sample ID:	W4317
Extraction Batch ID:	01-308
Batch Matrix:	Water
Sample Dilution Factor:	1.667
Sample Moisture Content (%):	NA
Sample Volume (L):	1.00
Reporting Units:	total ng

PCB

Biphenyl	7.11 J
PCB1	ND U
PCB3	ND U
PCB4/10	6.22
PCB6	0.44 J
PCB7/9	ND U
PCB8/5	1.38 J
PCB12/13	ND U
PCB16/32	1.23 J
PCB17	2.03 J
PCB18	2.30 J
PCB19	5.17
PCB21	ND U
PCB22	0.58 J
PCB24/27	1.71 J
PCB25	ND U
PCB26	0.52 J
PCB28	1.75 J
PCB29	ND U
PCB31	1.74 J
PCB33/20	0.71 J
PCB40	ND U
PCB41/64/71	2.79 J
PCB42	0.98 J
PCB43	ND U
PCB44	2.57 J
PCB45	ND U
PCB46	0.32 J
PCB47/75	2.62 J
PCB48	1.10 J
PCB49	3.71 J
PCB51	1.57 J
PCB52	6.53
PCB53	2.79 J
PCB56/60	1.15 J
PCB59	0.52 J
PCB63	ND U
PCB66	2.40 J
PCB70/76	2.31 J
PCB74	1.70 J
PCB82	ND U
PCB83	ND U
PCB84	1.32 J
PCB85	0.89 J
PCB87/115	2.46 J
PCB89	1.62 J
PCB91	1.48 J
PCB92	1.26 J
PCB95	4.64 J
PCB97	0.75 J
PCB99	2.02 J
PCB100	ND U
PCB101/90	1.70 J
PCB105	0.88 J
PCB107	ND U
PCB110	4.48 J
PCB114	ND U
PCB118	1.69 J
PCB119	ND U
PCB124	ND U
PCB128	ND U
PCB129	ND U
PCB130	ND U
PCB131	ND U
PCB132	0.81 J

Client Reporting Sample ID:	GLASS FIBER T-L
PCB134	ND U
PCB135/144	0.66 J
PCB136	0.78 J
PCB137	ND U
PCB138/160/163	2.64 J
PCB141	ND U
PCB146	ND U
PCB149	2.14 J
PCB151	0.95 J
PCB153	2.14 J
PCB156	ND U
PCB158	ND U
PCB167	ND U
PCB169	ND U
PCB170/190	ND U
PCB171	ND U
PCB172	ND U
PCB173	ND U
PCB174	ND U
PCB175	ND U
PCB176	ND U
PCB177	ND U
PCB178	ND U
PCB180	ND U
PCB183	ND U
PCB184	ND U
PCB185	ND U
PCB187/182	ND U
PCB189	ND U
PCB191	ND U
PCB193	ND U
PCB194	ND U
PCB195	ND U
PCB197	ND U
PCB198	ND U
PCB199	ND U
PCB200	ND U
PCB201	ND U
PCB203/196	ND U
PCB205	ND U
PCB206	ND U
PCB207	ND U
PCB209	ND U

Surrogate Recovery (%)	
PCB104	74
PCB14	70
PCB34	59
PCB112	59

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or pre(
NA = Not Applicable.
J = Detected, but below the sample specif
Y = Peak area higher than the highest cali
D = Diluted sample concentration reportec

Level of Chlorination	GLASS FIBER T-L
Cl 1	0.00
Cl 2	8.04
Cl 3	17.74
Cl 4	33.07
Cl 5	25.18
Cl 6	10.13
Cl 7	0.00
Cl 8	0.00
Cl 9	0.00
Cl 10	0.00
SUM PCB	101.27

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: Glass Fiber

Client Reporting Sample ID:	C-0 GLASS FIBER (1.0)	C-0 GLASS FIBER (.7)	C-1 GLASS FIBER	C-2 GLASS FIBER
Battelle Sample ID:	W4289	W4291	W4293	W4295
Extraction Batch ID:	01-308	01-308	01-308	01-308
Batch Matrix:	Water	Water	Water	Water
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	NA	NA	NA	NA
Sample Volume (L):	1.00	1.00	1.00	1.00
Reporting Units:	total ng	total ng	total ng	total ng
PCB				
Biphenyl	5.06 J	7.24 J	5.62 J	6.37 J
PCB1	ND U	ND U	ND U	ND U
PCB3	0.20 J	ND U	ND U	ND U
PCB4/10	0.29 J	ND U	0.60 J	ND U
PCB6	0.32 J	ND U	ND U	ND U
PCB7/9	0.25 J	ND U	ND U	ND U
PCB8/5	0.32 J	ND U	ND U	ND U
PCB12/13	0.40 J	ND U	ND U	ND U
PCB16/32	0.35 J	ND U	1.41 J	ND U
PCB17	0.43 J	ND U	0.40 J	ND U
PCB18	0.55 J	ND U	1.12 J	ND U
PCB19	0.33 J	ND U	1.49 J	ND U
PCB21	ND U	ND U	ND U	ND U
PCB22	0.16 J	ND U	ND U	ND U
PCB24/27	0.31 J	ND U	0.81 J	ND U
PCB25	0.30 J	ND U	ND U	ND U
PCB26	0.30 J	ND U	ND U	ND U
PCB28	0.23 J	ND U	1.31 J	ND U
PCB29	ND U	ND U	ND U	ND U
PCB31	0.29 J	ND U	0.78 J	ND U
PCB33/20	ND U	ND U	ND U	ND U
PCB40	ND U	ND U	ND U	ND U
PCB41/64/71	ND U	ND U	2.59 J	ND U
PCB42	0.29 J	ND U	0.95 J	ND U
PCB43	0.21 J	ND U	ND U	ND U
PCB44	0.46 J	ND U	3.26 J	ND U
PCB45	ND U	ND U	1.03 J	ND U
PCB46	0.19 J	ND U	0.73 J	ND U
PCB47/75	0.88 J	ND U	0.95 J	ND U
PCB48	0.38 J	ND U	0.47 J	ND U
PCB49	0.57 J	ND U	1.85 J	ND U
PCB51	1.03 J	0.90 J	1.46 J	1.12 J
PCB52	1.75 J	1.63 J	4.02 J	1.35 J
PCB53	0.19 J	ND U	1.22 J	ND U
PCB56/60	0.32 J	ND U	1.29 J	ND U
PCB59	0.42 J	ND U	0.43 J	ND U
PCB63	0.25 J	ND U	ND U	ND U
PCB66	0.39 J	0.42 J	1.74 J	0.39 J
PCB70/76	0.52 J	ND U	0.97 J	0.25 J
PCB74	0.37 J	ND U	0.67 J	ND U
PCB82	ND U	ND U	ND U	ND U
PCB83	ND U	ND U	ND U	ND U
PCB84	0.46 J	ND U	0.78 J	ND U
PCB85	ND U	ND U	ND U	ND U
PCB87/115	0.83 J	ND U	0.98 J	ND U
PCB89	0.20 J	ND U	0.85 J	ND U
PCB91	ND U	ND U	0.35 J	ND U
PCB92	0.31 J	ND U	0.38 J	ND U
PCB95	0.72 J	ND U	1.49 J	0.50 J
PCB97	ND U	ND U	ND U	ND U
PCB99	ND U	ND U	0.67 J	ND U
PCB100	0.23 J	ND U	ND U	ND U
PCB101/90	0.90 J	ND U	0.43 J	ND U
PCB105	ND U	ND U	0.56 J	ND U
PCB107	ND U	ND U	ND U	ND U
PCB110	0.59 J	ND U	1.31 J	ND U
PCB114	0.38 J	ND U	ND U	ND U
PCB118	ND U	ND U	0.67 J	ND U
PCB119	ND U	ND U	ND U	ND U
PCB124	ND U	ND U	ND U	ND U
PCB128	ND U	ND U	ND U	ND U
PCB129	ND U	ND U	ND U	ND U
PCB130	ND U	ND U	ND U	ND U
PCB131	ND U	ND U	ND U	ND U
PCB132	0.21 J	ND U	0.39 J	ND U

Client Reporting Sample ID:	C-0 GLASS FIBER (1.0)	C-0 GLASS FIBER (.7)	C-1 GLASS FIBER	C-2 GLASS FIBER
PCB134	ND U	ND U	ND U	ND U
PCB135/144	ND U	ND U	ND U	ND U
PCB136	0.48 J	ND U	0.44 J	ND U
PCB137	ND U	ND U	ND U	ND U
PCB138/160/163	ND U	ND U	0.62 J	ND U
PCB141	ND U	ND U	ND U	ND U
PCB146	ND U	ND U	ND U	ND U
PCB149	0.28 J	ND U	0.39 J	ND U
PCB151	ND U	ND U	ND U	ND U
PCB153	0.14 J	ND U	0.62 J	ND U
PCB156	ND U	ND U	ND U	ND U
PCB158	ND U	0.33 J	0.48 J	0.37 J
PCB167	ND U	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	ND U	ND U
PCB171	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	ND U	ND U
PCB175	ND U	ND U	ND U	ND U
PCB176	0.18 J	ND U	ND U	ND U
PCB177	ND U	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U
PCB180	ND U	ND U	ND U	ND U
PCB183	ND U	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U
PCB187/182	ND U	ND U	ND U	ND U
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U

Surrogate Recovery (%)				
PCB104	73	77	72	77
PCB14	67	73	69	74
PCB34	65	69	65	69
PCB112	73	77	72	75

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

Level of Chlorination	C-0 GLASS FIBER (1.0)	C-0 GLASS FIBER (.7)	C-1 GLASS FIBER	C-2 GLASS FIBER
Cl 1	0.20	0.00	0.00	0.00
Cl 2	1.58	0.00	0.60	0.00
Cl 3	3.25	0.00	7.31	0.00
Cl 4	8.21	2.95	23.63	3.10
Cl 5	4.63	0.00	8.46	0.50
Cl 6	1.12	0.33	2.93	0.37
Cl 7	0.18	0.00	0.00	0.00
Cl 8	0.00	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00
SUM PCB	24.23	10.53	48.54	10.35

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Project Name: Lake Hartwell
Project Number: G482801-UC21 **Core/Site: Glass Fiber**

Client Reporting Sample ID:	C-3 GLASS FIBER	C-4 GLASS FIBER	C-5 GLASS FIBER	C-6 GLASS FIBER
Battelle Sample ID:	W4297	W4299	W4301	W4303
Extraction Batch ID:	01-308	01-308	01-308	01-308
Batch Matrix:	Water	Water	Water	Water
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	NA	NA	NA	NA
Sample Volume (L):	1.00	1.00	1.00	1.00
Reporting Units:	total ng	total ng	total ng	total ng
PCB				
Biphenyl	7.27 J	5.01 J	5.99 J	4.88 J
PCB1	ND U	ND U	ND U	0.92 J
PCB3	ND U	ND U	ND U	ND U
PCB4/10	1.48 J	ND U	1.63 J	4.49 J
PCB6	0.18 J	ND U	0.13 J	0.26 J
PCB7/9	ND U	ND U	ND U	ND U
PCB8/5	0.28 J	ND U	0.39 J	0.72 J
PCB12/13	ND U	ND U	ND U	ND U
PCB16/32	1.30 J	ND U	0.59 J	1.62 J
PCB17	1.33 J	ND U	0.64 J	1.02 J
PCB18	1.43 J	ND U	0.55 J	0.89 J
PCB19	1.69 J	ND U	1.40 J	3.11 J
PCB21	ND U	ND U	ND U	ND U
PCB22	ND U	ND U	ND U	ND U
PCB24/27	0.77 J	ND U	0.51 J	0.82 J
PCB25	ND U	ND U	ND U	0.25 J
PCB26	0.58 J	ND U	ND U	0.47 J
PCB28	2.43 J	ND U	1.37 J	0.62 J
PCB29	ND U	ND U	ND U	ND U
PCB31	1.50 J	ND U	0.75 J	0.84 J
PCB33/20	0.44 J	ND U	ND U	ND U
PCB40	ND U	ND U	ND U	ND U
PCB41/64/71	3.93 J	ND U	1.41 J	1.30 J
PCB42	1.78 J	ND U	0.93 J	0.54 J
PCB43	ND U	ND U	ND U	ND U
PCB44	3.11 J	ND U	1.34 J	0.87 J
PCB45	ND U	ND U	ND U	ND U
PCB46	ND U	ND U	ND U	ND U
PCB47/75	2.15 J	ND U	0.88 J	1.04 J
PCB48	1.58 J	ND U	0.57 J	0.33 J
PCB49	2.92 J	ND U	1.45 J	1.37 J
PCB51	1.37 J	0.63 J	0.90 J	0.87 J
PCB52	5.97	1.02 J	2.73 J	2.58 J
PCB53	1.18 J	ND U	0.83 J	0.89 J
PCB56/60	2.46 J	ND U	1.43 J	0.96 J
PCB59	0.68 J	ND U	0.31 J	0.24 J
PCB63	ND U	ND U	ND U	ND U
PCB66	4.22 J	ND U	2.16 J	1.53 J
PCB70/76	2.66 J	ND U	1.39 J	1.37 J
PCB74	2.71 J	ND U	1.38 J	0.95 J
PCB82	0.70 J	ND U	ND U	ND U
PCB83	ND U	ND U	ND U	ND U
PCB84	1.47 J	ND U	0.63 J	0.43 J
PCB85	0.88 J	ND U	ND U	ND U
PCB87/115	1.38 J	ND U	1.04 J	1.61 J
PCB89	1.65 J	ND U	0.82 J	1.93 J
PCB91	0.56 J	ND U	ND U	0.71 J
PCB92	1.14 J	ND U	0.45 J	0.55 J
PCB95	3.08 J	ND U	1.62 J	1.62 J
PCB97	1.12 J	ND U	0.62 J	ND U
PCB99	1.91 J	ND U	ND U	0.71 J
PCB100	ND U	ND U	ND U	ND U
PCB101/90	1.55 J	ND U	0.73 J	1.54 J
PCB105	1.07 J	ND U	0.70 J	0.34 J
PCB107	ND U	ND U	ND U	ND U
PCB110	4.49 J	ND U	1.79 J	2.12 J
PCB114	ND U	ND U	ND U	ND U
PCB118	2.50 J	ND U	1.46 J	1.35 J
PCB119	ND U	ND U	ND U	ND U
PCB124	ND U	ND U	ND U	ND U
PCB128	ND U	ND U	ND U	ND U
PCB129	ND U	ND U	ND U	ND U
PCB130	ND U	ND U	ND U	ND U
PCB131	ND U	ND U	ND U	ND U
PCB132	1.17 J	ND U	0.78 J	0.64 J

Client Reporting Sample ID:	C-3 GLASS FIBER	C-4 GLASS FIBER	C-5 GLASS FIBER	C-6 GLASS FIBER
PCB134	ND U	ND U	ND U	ND U
PCB135/144	ND U	ND U	ND U	ND U
PCB136	0.89 J	ND U	ND U	0.63 J
PCB137	ND U	ND U	ND U	ND U
PCB138/160/163	2.41 J	ND U	1.36 J	1.59 J
PCB141	ND U	ND U	ND U	ND U
PCB146	ND U	ND U	ND U	0.35 J
PCB149	1.07 J	ND U	0.67 J	0.96 J
PCB151	ND U	ND U	ND U	ND U
PCB153	1.48 J	ND U	0.81 J	1.09 J
PCB156	ND U	ND U	ND U	ND U
PCB158	0.44 J	ND U	ND U	ND U
PCB167	ND U	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	ND U	ND U
PCB171	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	ND U	ND U
PCB175	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	ND U	ND U
PCB177	ND U	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U
PCB180	ND U	ND U	ND U	ND U
PCB183	ND U	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U
PCB187/182	ND U	ND U	ND U	ND U
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U

Surrogate Recovery (%)				
PCB104	78	59	63	60
PCB14	76	60	65	63
PCB34	70	51	54	50
PCB112	70	36 &	36 &	29 &

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or pre
NA = Not Applicable.
J = Detected, but below the sample specif
Y = Peak area higher than the highest cali
D = Diluted sample concentration reporte

Level of Chlorination	C-3 GLASS FIBER	C-4 GLASS FIBER	C-5 GLASS FIBER	C-6 GLASS FIBER
Cl 1	0.00	0.00	0.00	0.92
Cl 2	1.95	0.00	2.15	5.47
Cl 3	11.47	0.00	5.81	9.64
Cl 4	36.69	1.65	17.71	14.83
Cl 5	23.51	0.00	9.88	12.91
Cl 6	7.46	0.00	3.62	5.27
Cl 7	0.00	0.00	0.00	0.00
Cl 8	0.00	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00
SUM PCB	88.35	6.66	45.17	53.92

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PCB DATA - Filters

Project Name: Lake Hartwell
Project Number: G482801-UC21

Core/Site: Glass Fiber

Client Reporting Sample ID:	BLANK 3 GLASS FIBER	BLANK 1 GLASS FIBER	BLANK 2 GLASS FIBER	T-0 GLASS FIBER
Battelle Sample ID:	W4305	W4307	W4309	W4315
Extraction Batch ID:	01-308	01-308	01-308	01-308
Batch Matrix:	Water	Water	Water	Water
Sample Dilution Factor:	1.667	1.667	1.667	1.667
Sample Moisture Content (%):	NA	NA	NA	NA
Sample Volume (L):	1.00	1.00	1.00	1.00
Reporting Units:	total ng	total ng	total ng	total ng
PCB				
Biphenyl	7.03 J	3.92 J	5.89 J	8.45
PCB1	ND U	ND U	ND U	3.57 J
PCB3	ND U	ND U	ND U	0.66 J
PCB4/10	ND U	ND U	ND U	38.71
PCB6	ND U	ND U	ND U	0.71 J
PCB7/9	ND U	ND U	ND U	ND U
PCB8/5	ND U	ND U	ND U	5.18
PCB12/13	ND U	ND U	ND U	ND U
PCB16/32	ND U	ND U	ND U	13.51
PCB17	ND U	ND U	ND U	8.92
PCB18	ND U	ND U	ND U	5.66
PCB19	ND U	ND U	ND U	30.21
PCB21	ND U	ND U	ND U	ND U
PCB22	ND U	ND U	ND U	1.43 J
PCB24/27	ND U	ND U	ND U	10.11
PCB25	ND U	ND U	ND U	1.60 J
PCB26	ND U	ND U	ND U	3.78 J
PCB28	ND U	ND U	ND U	7.64
PCB29	ND U	ND U	ND U	ND U
PCB31	ND U	ND U	ND U	7.31
PCB33/20	ND U	ND U	ND U	1.66 J
PCB40	ND U	ND U	ND U	ND U
PCB41/64/71	ND U	ND U	ND U	11.92
PCB42	ND U	ND U	ND U	2.78 J
PCB43	ND U	ND U	ND U	ND U
PCB44	ND U	ND U	ND U	9.44
PCB45	ND U	ND U	ND U	2.01 J
PCB46	ND U	ND U	ND U	1.10 J
PCB47/75	ND U	ND U	ND U	12.07
PCB48	ND U	ND U	ND U	2.77 J
PCB49	ND U	ND U	ND U	16.15
PCB51	0.68 J	0.98 J	0.77 J	7.72
PCB52	0.62 J	1.35 J	0.99 J	19.51
PCB53	ND U	ND U	ND U	12.17
PCB56/60	ND U	ND U	ND U	6.22
PCB59	ND U	ND U	ND U	1.33 J
PCB63	ND U	ND U	ND U	0.60 J
PCB66	ND U	ND U	0.28 J	11.21
PCB70/76	ND U	ND U	ND U	9.00
PCB74	ND U	ND U	ND U	7.08
PCB82	ND U	ND U	ND U	1.98 J
PCB83	ND U	ND U	ND U	2.25 J
PCB84	ND U	ND U	ND U	4.05 J
PCB85	ND U	ND U	ND U	2.52 J
PCB87/115	0.85 J	ND U	ND U	3.21 J
PCB89	ND U	ND U	ND U	5.66
PCB91	ND U	ND U	ND U	4.08 J
PCB92	ND U	ND U	ND U	3.06 J
PCB95	ND U	ND U	ND U	13.26
PCB97	ND U	ND U	ND U	3.02 J
PCB99	ND U	ND U	ND U	5.81
PCB100	ND U	ND U	ND U	1.02 J
PCB101/90	ND U	ND U	ND U	7.10
PCB105	ND U	ND U	ND U	2.97 J
PCB107	ND U	ND U	ND U	1.26 J
PCB110	ND U	ND U	ND U	16.36
PCB114	ND U	ND U	ND U	ND U
PCB118	ND U	ND U	ND U	8.36
PCB119	ND U	ND U	ND U	0.81 J
PCB124	ND U	ND U	ND U	ND U
PCB128	ND U	ND U	ND U	1.51 J
PCB129	ND U	ND U	ND U	ND U
PCB130	ND U	ND U	ND U	0.95 J
PCB131	ND U	ND U	ND U	ND U
PCB132	ND U	ND U	ND U	3.11 J

Client Reporting Sample ID:	BLANK 3 GLASS FIBER	BLANK 1 GLASS FIBER	BLANK 2 GLASS FIBER	T-0 GLASS FIBER
PCB134	ND U	ND U	ND U	ND U
PCB135/144	ND U	ND U	ND U	2.01 J
PCB136	ND U	ND U	ND U	1.99 J
PCB137	ND U	ND U	ND U	0.52 J
PCB138/160/163	ND U	ND U	ND U	8.80
PCB141	ND U	ND U	ND U	1.38 J
PCB146	ND U	ND U	ND U	1.81 J
PCB149	ND U	ND U	ND U	6.34
PCB151	ND U	ND U	ND U	2.93 J
PCB153	ND U	ND U	ND U	5.87
PCB156	ND U	ND U	ND U	ND U
PCB158	ND U	ND U	ND U	0.55 J
PCB167	ND U	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	ND U	ND U
PCB171	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	ND U	ND U
PCB175	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	ND U	ND U
PCB177	ND U	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U
PCB180	ND U	ND U	ND U	ND U
PCB183	ND U	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U
PCB187/182	ND U	ND U	ND U	ND U
PCB189	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U

Surrogate Recovery (%)				
PCB104	64	71	60	80
PCB14	64	72	69	69
PCB34	52	59	47	61
PCB112	32 &	39 &	22 &	63

U = Analyte not detected, "ND" reported.
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NA = Not Applicable.
J = Detected, but below the sample specif
Y = Peak area higher than the highest cali
D = Diluted sample concentration reportec

Level of Chlorination	BLANK 3 GLASS FIBER	BLANK 1 GLASS FIBER	BLANK 2 GLASS FIBER	T-0 GLASS FIBER
Cl 1	0.00	0.00	0.00	4.22
Cl 2	0.00	0.00	0.00	44.59
Cl 3	0.00	0.00	0.00	91.82
Cl 4	1.29	2.33	2.05	133.06
Cl 5	0.85	0.00	0.00	86.78
Cl 6	0.00	0.00	0.00	37.77
Cl 7	0.00	0.00	0.00	0.00
Cl 8	0.00	0.00	0.00	0.00
Cl 9	0.00	0.00	0.00	0.00
Cl 10	0.00	0.00	0.00	0.00
SUM PCB	9.17	6.24	7.93	406.68

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Project Name: Lake Hartwell
Project Number: G482801-UC21 **Core/Site: Glass Fiber**

Client Reporting Sample ID:	GLASS FIBER T-L
Battelle Sample ID:	W4317
Extraction Batch ID:	01-308
Batch Matrix:	Water
Sample Dilution Factor:	1.667
Sample Moisture Content (%):	NA
Sample Volume (L):	1.00
Reporting Units:	total ng

PCB	
Biphenyl	7.11 J
PCB1	ND U
PCB3	ND U
PCB4/10	6.22
PCB6	0.44 J
PCB7/9	ND U
PCB8/5	1.38 J
PCB12/13	ND U
PCB16/32	1.23 J
PCB17	2.03 J
PCB18	2.30 J
PCB19	5.17
PCB21	ND U
PCB22	0.58 J
PCB24/27	1.71 J
PCB25	ND U
PCB26	0.52 J
PCB28	1.75 J
PCB29	ND U
PCB31	1.74 J
PCB33/20	0.71 J
PCB40	ND U
PCB41/64/71	2.79 J
PCB42	0.98 J
PCB43	ND U
PCB44	2.57 J
PCB45	ND U
PCB46	0.32 J
PCB47/75	2.62 J
PCB48	1.10 J
PCB49	3.71 J
PCB51	1.57 J
PCB52	6.53
PCB53	2.79 J
PCB56/60	1.15 J
PCB59	0.52 J
PCB63	ND U
PCB66	2.40 J
PCB70/76	2.31 J
PCB74	1.70 J
PCB82	ND U
PCB83	ND U
PCB84	1.32 J
PCB85	0.89 J
PCB87/115	2.46 J
PCB89	1.62 J
PCB91	1.48 J
PCB92	1.26 J
PCB95	4.64 J
PCB97	0.75 J
PCB99	2.02 J
PCB100	ND U
PCB101/90	1.70 J
PCB105	0.88 J
PCB107	ND U
PCB110	4.48 J
PCB114	ND U
PCB118	1.69 J
PCB119	ND U
PCB124	ND U
PCB128	ND U
PCB129	ND U
PCB130	ND U
PCB131	ND U
PCB132	0.81 J

Client Reporting Sample ID:	GLASS FIBER T-L
PCB134	ND U
PCB135/144	0.66 J
PCB136	0.78 J
PCB137	ND U
PCB138/160/163	2.64 J
PCB141	ND U
PCB146	ND U
PCB149	2.14 J
PCB151	0.95 J
PCB153	2.14 J
PCB156	ND U
PCB158	ND U
PCB167	ND U
PCB169	ND U
PCB170/190	ND U
PCB171	ND U
PCB172	ND U
PCB173	ND U
PCB174	ND U
PCB175	ND U
PCB176	ND U
PCB177	ND U
PCB178	ND U
PCB180	ND U
PCB183	ND U
PCB184	ND U
PCB185	ND U
PCB187/182	ND U
PCB189	ND U
PCB191	ND U
PCB193	ND U
PCB194	ND U
PCB195	ND U
PCB197	ND U
PCB198	ND U
PCB199	ND U
PCB200	ND U
PCB201	ND U
PCB203/196	ND U
PCB205	ND U
PCB206	ND U
PCB207	ND U
PCB209	ND U

Surrogate Recovery (%)	
PCB104	74
PCB14	70
PCB34	59
PCB112	59

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or pre
NA = Not Applicable.
J = Detected, but below the sample specif
Y = Peak area higher than the highest cali
D = Diluted sample concentration reporte

Level of Chlorination	GLASS FIBER T-L
Cl 1	0.00
Cl 2	8.04
Cl 3	17.74
Cl 4	33.07
Cl 5	25.18
Cl 6	10.13
Cl 7	0.00
Cl 8	0.00
Cl 9	0.00
Cl 10	0.00
SUM PCB	101.27

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Procedural Blank Data

Battelle Sample ID:	YW71PB	YX52PB	YW81PB-R	YW84PB	YW78PB	YW87PB
Extraction Batch ID:	01-202	01-222	01-206	01-207	01-204	01-208
Batch Matrix:	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	1.667	1.667	4.168	1.667	1.667	1.667
Sample Moisture Content	NA	NA	NA	NA	NA	NA
Sample Dry Weight (g):	8.00	9	9	7.00	9.00	9.00
Reporting Units:	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight	ng/g,dry weight
PCB						
PCB1	ND U	ND U	0.23 J	0.23 J	0.23 J	ND U
PCB3	ND U	ND U	ND U	ND U	0.09 J	ND U
PCB4/10	ND U	0.21 J	0.85 J	0.87 J	0.83 J	ND U
PCB6	ND U	ND U	ND U	ND U	ND U	ND U
PCB7/9	ND U	0.19 J	ND U	ND U	ND U	ND U
PCB8/5	ND U	ND U	ND U	0.27 J	0.27 J	ND U
PCB12/13	ND U	ND U	ND U	ND U	ND U	ND U
PCB16/32	ND U	ND U	ND U	0.48 J	0.31 J	ND U
PCB17	ND U	ND U	ND U	ND U	ND U	ND U
PCB18	ND U	ND U	ND U	ND U	ND U	ND U
PCB19	ND U	ND U	0.47 J	0.39 J	0.37 J	ND U
PCB21	ND U	ND U	ND U	ND U	ND U	ND U
PCB22	ND U	ND U	ND U	ND U	ND U	ND U
PCB24/27	ND U	ND U	0.14 J	ND U	0.12 J	ND U
PCB25	ND U	ND U	ND U	ND U	ND U	ND U
PCB26	ND U	ND U	ND U	ND U	ND U	ND U
PCB28	ND U	ND U	ND U	ND U	ND U	ND U
PCB29	ND U	ND U	ND U	ND U	ND U	ND U
PCB31	ND U	ND U	ND U	ND U	ND U	ND U
PCB33/20	ND U	ND U	ND U	ND U	ND U	ND U
PCB40	ND U	ND U	ND U	ND U	0.57 J	ND U
PCB41/64/71	ND U	ND U	ND U	ND U	ND U	ND U
PCB42	ND U	ND U	ND U	ND U	ND U	ND U
PCB43	ND U	ND U	ND U	ND U	ND U	ND U
PCB44	ND U	ND U	ND U	ND U	ND U	ND U
PCB45	ND U	ND U	ND U	ND U	ND U	ND U
PCB46	ND U	ND U	ND U	ND U	ND U	ND U
PCB47/75	ND U	ND U	ND U	ND U	ND U	ND U
PCB48	ND U	ND U	ND U	ND U	ND U	ND U
PCB49	ND U	ND U	ND U	ND U	0.21 J	ND U
PCB51	ND U	ND U	ND U	ND U	ND U	ND U
PCB52	ND U	ND U	ND U	ND U	ND U	ND U
PCB53	ND U	ND U	ND U	ND U	0.12 J	ND U
PCB56/60	ND U	ND U	ND U	ND U	ND U	ND U
PCB59	ND U	ND U	ND U	ND U	ND U	ND U
PCB63	ND U	ND U	ND U	ND U	ND U	ND U
PCB66	ND U	ND U	ND U	ND U	0.13 J	ND U
PCB70/76	ND U	ND U	ND U	ND U	ND U	ND U
PCB74	ND U	ND U	ND U	ND U	ND U	ND U
PCB82	ND U	ND U	ND U	ND U	ND U	ND U
PCB83	ND U	ND U	ND U	ND U	ND U	ND U
PCB84	ND U	ND U	ND U	ND U	ND U	ND U
PCB85	ND U	ND U	ND U	ND U	ND U	ND U
PCB87/115	ND U	ND U	ND U	ND U	ND U	ND U
PCB89	ND U	ND U	ND U	ND U	ND U	ND U
PCB91	ND U	ND U	ND U	ND U	ND U	ND U
PCB92	ND U	ND U	ND U	ND U	ND U	ND U
PCB95	ND U	ND U	ND U	ND U	ND U	ND U
PCB97	ND U	ND U	ND U	ND U	ND U	ND U
PCB99	ND U	ND U	ND U	ND U	ND U	ND U
PCB100	ND U	ND U	ND U	ND U	ND U	ND U
PCB101/90	ND U	ND U	ND U	ND U	ND U	ND U
PCB105	ND U	ND U	ND U	ND U	ND U	ND U
PCB107	ND U	ND U	ND U	ND U	ND U	ND U
PCB110	ND U	ND U	ND U	ND U	ND U	ND U
PCB114	ND U	ND U	ND U	ND U	ND U	ND U
PCB118	ND U	ND U	ND U	ND U	ND U	ND U
PCB119	ND U	ND U	ND U	ND U	ND U	ND U
PCB124	ND U	ND U	ND U	ND U	ND U	ND U
PCB128	ND U	ND U	ND U	ND U	ND U	ND U

Battelle Sample ID:	YW71PB	YX52PB	YW81PB-R	YW84PB	YW78PB	YW87PB
PCB129	ND U	ND U	ND U	ND U	ND U	ND U
PCB130	ND U	ND U	ND U	ND U	ND U	ND U
PCB131	ND U	ND U	ND U	ND U	ND U	ND U
PCB132	ND U	ND U	ND U	ND U	ND U	ND U
PCB134	ND U	ND U	ND U	ND U	ND U	ND U
PCB135/144	ND U	ND U	ND U	ND U	ND U	ND U
PCB136	ND U	ND U	ND U	ND U	ND U	ND U
PCB137	ND U	ND U	ND U	ND U	ND U	ND U
PCB138/160/163	ND U	ND U	ND U	ND U	ND U	ND U
PCB141	ND U	ND U	ND U	ND U	ND U	ND U
PCB146	ND U	ND U	ND U	ND U	ND U	ND U
PCB149	ND U	ND U	ND U	ND U	ND U	ND U
PCB151	ND U	ND U	ND U	ND U	ND U	ND U
PCB153	ND U	ND U	ND U	ND U	ND U	ND U
PCB156	ND U	ND U	ND U	ND U	ND U	ND U
PCB158	ND U	ND U	ND U	ND U	ND U	ND U
PCB167	ND U	ND U	ND U	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	ND U	ND U	ND U	ND U
PCB171	ND U	ND U	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	ND U	ND U	ND U	ND U
PCB175	ND U	ND U	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	ND U	ND U	ND U	ND U
PCB177	ND U	ND U	ND U	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U	ND U	ND U
PCB180	ND U	ND U	ND U	ND U	ND U	ND U
PCB183	ND U	ND U	ND U	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U	ND U	ND U
PCB187/182	ND U	ND U	ND U	ND U	ND U	ND U
PCB189	ND U	ND U	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U	ND U	ND U
Biphenyl	0.30 J	ND U	2.25 J	ND U	0.30 J	0.23 J
Surrogate Recovery (%)						
PCB104	61	35 &	66	74	58	59
PCB14	50	33 &	67	61	57	57
PCB34	52	29 &	60	53	55	55
PCB112	64	29 &	65	54	61	63

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

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Project Name: Lake Hartv
Project Number: G482801

Procedural Blank Data

Battelle Sample ID:	YW90PB	YW68PB	ZA15PB	ZA17PB	ZA13PB
Extraction Batch ID:	01-209	01-201	01-309	01-309	01-308
Batch Matrix:	Sediment	Sediment	Water	Water	Water
Sample Dilution Factor:	1.667	1.667	1.667	1.667	1.667
Sample Moisture Content	NA	NA	NA	NA	NA
Sample Dry Weight (g):	13	12	1	1	1
Reporting Units:	ng/g,dry weight	ng/g,dry weight	total ng	total ng	total ng
PCB					
PCB1	0.04 J	ND U	ND U	ND U	ND U
PCB3	0.04 J	ND U	ND U	ND U	ND U
PCB4/10	0.38 J	ND U	ND U	ND U	ND U
PCB6	ND U	ND U	ND U	ND U	ND U
PCB7/9	ND U	ND U	ND U	ND U	ND U
PCB8/5	ND U	ND U	ND U	ND U	ND U
PCB12/13	ND U	ND U	ND U	ND U	ND U
PCB16/32	0.12 J	ND U	ND U	ND U	ND U
PCB17	ND U	ND U	ND U	ND U	ND U
PCB18	ND U	ND U	ND U	ND U	ND U
PCB19	0.19 J	ND U	ND U	ND U	ND U
PCB21	ND U	ND U	ND U	ND U	ND U
PCB22	ND U	ND U	ND U	ND U	ND U
PCB24/27	ND U	ND U	ND U	ND U	ND U
PCB25	ND U	ND U	ND U	ND U	ND U
PCB26	ND U	ND U	ND U	ND U	ND U
PCB28	ND U	ND U	ND U	ND U	ND U
PCB29	ND U	ND U	ND U	ND U	ND U
PCB31	ND U	ND U	ND U	ND U	ND U
PCB33/20	ND U	ND U	ND U	ND U	ND U
PCB40	ND U	ND U	ND U	ND U	ND U
PCB41/64/71	ND U	ND U	0.83 J	ND U	ND U
PCB42	ND U	ND U	0.45 J	ND U	ND U
PCB43	ND U	ND U	ND U	ND U	ND U
PCB44	ND U	ND U	0.89 J	ND U	ND U
PCB45	ND U	ND U	ND U	ND U	ND U
PCB46	ND U	ND U	ND U	ND U	ND U
PCB47/75	ND U	ND U	0.46 J	ND U	ND U
PCB48	ND U	ND U	0.31 J	ND U	ND U
PCB49	ND U	ND U	0.85 J	ND U	ND U
PCB51	ND U	ND U	1.18 J	1.16 J	0.77 J
PCB52	ND U	ND U	3.00 J	1.50 J	1.45 J
PCB53	ND U	ND U	ND U	ND U	ND U
PCB56/60	ND U	ND U	0.56 J	ND U	ND U
PCB59	ND U	ND U	0.31 J	ND U	0.17 J
PCB63	ND U	ND U	ND U	ND U	ND U
PCB66	ND U	0.10 J	0.92 J	ND U	ND U
PCB70/76	ND U	ND U	0.76 J	ND U	ND U
PCB74	ND U	ND U	ND U	ND U	ND U
PCB82	ND U	ND U	ND U	ND U	ND U
PCB83	ND U	ND U	ND U	ND U	ND U
PCB84	ND U	ND U	0.61 J	ND U	ND U
PCB85	ND U	ND U	ND U	ND U	ND U
PCB87/115	ND U	ND U	1.32 J	ND U	ND U
PCB89	ND U	ND U	0.35 J	ND U	ND U
PCB91	ND U	ND U	0.30 J	ND U	ND U
PCB92	ND U	ND U	ND U	ND U	ND U
PCB95	ND U	ND U	0.86 J	ND U	ND U
PCB97	ND U	ND U	ND U	ND U	ND U
PCB99	ND U	ND U	ND U	ND U	ND U
PCB100	ND U	ND U	ND U	ND U	ND U
PCB101/90	ND U	ND U	0.51 J	ND U	ND U
PCB105	ND U	ND U	ND U	ND U	ND U
PCB107	ND U	ND U	ND U	ND U	ND U
PCB110	ND U	ND U	0.64 J	ND U	ND U
PCB114	ND U	ND U	ND U	ND U	ND U
PCB118	ND U	ND U	ND U	ND U	ND U
PCB119	ND U	ND U	ND U	ND U	ND U
PCB124	ND U	ND U	ND U	ND U	ND U
PCB128	ND U	ND U	ND U	ND U	ND U

Battelle Sample ID:	YW90PB	YW68PB	ZA15PB	ZA17PB	ZA13PB
PCB129	ND U	ND U	ND U	ND U	ND U
PCB130	ND U	ND U	ND U	ND U	ND U
PCB131	ND U	ND U	ND U	ND U	ND U
PCB132	ND U	ND U	ND U	ND U	ND U
PCB134	ND U	ND U	ND U	ND U	ND U
PCB135/144	ND U	ND U	ND U	ND U	ND U
PCB136	ND U	ND U	0.34 J	ND U	0.45 J
PCB137	ND U	ND U	ND U	ND U	ND U
PCB138/160/163	ND U	ND U	ND U	ND U	ND U
PCB141	ND U	ND U	ND U	ND U	ND U
PCB146	ND U	ND U	ND U	ND U	ND U
PCB149	ND U	ND U	ND U	ND U	ND U
PCB151	ND U	ND U	ND U	ND U	ND U
PCB153	ND U	ND U	ND U	ND U	ND U
PCB156	ND U	ND U	ND U	ND U	ND U
PCB158	ND U	ND U	ND U	ND U	ND U
PCB167	ND U	ND U	ND U	ND U	ND U
PCB169	ND U	ND U	ND U	ND U	ND U
PCB170/190	ND U	ND U	ND U	ND U	ND U
PCB171	ND U	ND U	ND U	ND U	ND U
PCB172	ND U	ND U	ND U	ND U	ND U
PCB173	ND U	ND U	ND U	ND U	ND U
PCB174	ND U	ND U	ND U	ND U	ND U
PCB175	ND U	ND U	ND U	ND U	ND U
PCB176	ND U	ND U	ND U	ND U	ND U
PCB177	ND U	ND U	ND U	ND U	ND U
PCB178	ND U	ND U	ND U	ND U	ND U
PCB180	ND U	ND U	ND U	ND U	ND U
PCB183	ND U	ND U	ND U	ND U	ND U
PCB184	ND U	ND U	ND U	ND U	ND U
PCB185	ND U	ND U	ND U	ND U	ND U
PCB187/182	ND U	ND U	ND U	ND U	ND U
PCB189	ND U	ND U	ND U	ND U	ND U
PCB191	ND U	ND U	ND U	ND U	ND U
PCB193	ND U	ND U	ND U	ND U	ND U
PCB194	ND U	ND U	ND U	ND U	ND U
PCB195	ND U	ND U	ND U	ND U	ND U
PCB197	ND U	ND U	ND U	ND U	ND U
PCB198	ND U	ND U	ND U	ND U	ND U
PCB199	ND U	ND U	ND U	ND U	ND U
PCB200	ND U	ND U	ND U	ND U	ND U
PCB201	ND U	ND U	ND U	ND U	ND U
PCB203/196	ND U	ND U	ND U	ND U	ND U
PCB205	ND U	ND U	ND U	ND U	ND U
PCB206	ND U	ND U	ND U	ND U	ND U
PCB207	ND U	ND U	ND U	ND U	ND U
PCB209	ND U	ND U	ND U	ND U	ND U
Biphenyl	1.07 J	0.20 J	32.71 B	9.97	4.14 J
Surrogate Recovery (%)					
PCB104	64	75	81	85	72
PCB14	62	76	75	86	67
PCB34	53	70	70	75	63
PCB112	59	72	87	82	84

U = Analyte not detected,
& = QC value outside the a
NA = Not Applicable.
J = Detected, but below th
Y = Peak area higher than
D = Diluted sample concei

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Laboratory Control Sample Data

Client Reporting Sample ID:							
Battelle Sample ID:	YW72LCS-R	YW88LCS	YW79LCS	YW85LCS	YW82LCS-R	YX53LCS	YW91LCS
Extraction Batch ID:	01-202	01-208	01-204	01-207	01-206	01-222	01-209
Batch Matrix:	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
Sample Dilution Factor:	4.167	1.67	1.67	1.667	4.168	1.667	1.667
Reporting Units:	% Recovery	% Recovery	% Recovery	% Recovery	% Recovery	% Recovery	% Recovery
PCB							
PCB1	62	62	55	55	72	47	34 &
PCB3	61	61	55	44	75	46	29 &
PCB4/10	70	68	58	52	69	49	35 &
PCB6	63	62	55	48	75	45	35 &
PCB7/9	61	61	56	49	76	42	34 &
PCB8/5	62	65	58	50	81	50	36 &
PCB12/13	61	63	58	46	82	46	36 &
PCB16/32	73	68	60	52	74	50	43
PCB17	70	68	60	52	74	53	39 &
PCB18	70	69	62	52	76	53	41
PCB19	73	68	59	56	69	50	39 &
PCB21	63	64	50	50	69	51	48
PCB22	64	66	60	50	83	54	45
PCB24/27	66	61	58	48	75	50	39 &
PCB25	67	66	59	49	82	52	42
PCB26	68	67	59	48	80	51	43
PCB28	67	70	63	50	87	54	43
PCB29	69	65	59	48	80	49	42
PCB31	65	67	61	48	81	56	43
PCB33/20	59	68	64	62	86	59	47
PCB41/64/71	70	69	65	56	85	57	60
PCB42	66	69	61	61	93	61	60
PCB43	74	64	56	52	70	56	51
PCB44	71	69	63	55	82	57	57
PCB45	68	64	59	53	75	54	47
PCB46	69	62	60	57	74	55	49
PCB47/75	69	67	64	52	79	54	52
PCB48	64	63	57	61	82	61	62
PCB49	65	67	58	59	88	58	49
PCB51	66	65	59	55	76	55	47
PCB52	70	67	62	53	82	55	51
PCB53	66	64	59	58	76	58	47
PCB56/60	75	74	68	56	92	59	85
PCB59	67	66	61	53	78	54	57
PCB63	70	71	65	52	84	54	61
PCB66	72	72	67	55	91	60	70
PCB70/76	73	75	67	54	92	60	69
PCB74	72	73	67	54	92	60	63
PCB82	73	71	68	59	87	58	79
PCB83	71	68	65	56	83	59	72
PCB84	70	71	66	59	86	64	75
PCB85	72	76	70	59	93	61	83
PCB87/115	76	73	66	57	88	59	77
PCB89	78	71	59	59	88	63	65
PCB91	71	69	65	57	81	58	66
PCB92	74	73	68	58	86	63	79
PCB95	69	70	65	62	84	66	68
PCB97	75	75	69	58	88	62	84
PCB99	75	74	69	57	88	60	76
PCB100	71	69	64	59	80	57	61
PCB101/90	67	72	69	67	84	66	82
PCB105	75	78	76	70	103	68	123
PCB107	76	77	71	59	91	60	86
PCB110	76	75	70	60	92	63	81
PCB114	75	75	70	59	91	60	86
PCB118	74	79	74	62	98	67	88
PCB119	76	72	67	56	83	58	75
PCB124	73	72	70	59	93	62	84
PCB128	76	77	78	71	107	72	121
PCB129	79	75	70	63	93	63	97
PCB130	73	74	72	67	90	66	93
PCB131	76	74	69	61	83	62	83
PCB132	76	76	74	69	94	79	110
PCB134	74	71	68	56	84	57	81
PCB135/144	75	73	70	60	87	65	82
PCB136	73	72	67	67	86	67	79
PCB137	76	80	74	66	98	62	102

Laboratory Control Sample Data

Client Reporting Sample ID:							
Battelle Sample ID:	YW72LCS-R	YW88LCS	YW79LCS	YW85LCS	YW82LCS-R	YX53LCS	YW91LCS
PCB138/160/163	76	79	75	67	97	63	100
PCB141	80	79	75	65	91	61	98
PCB146	78	78	74	63	94	65	91
PCB149	78	76	71	61	90	67	85
PCB151	74	73	69	60	87	66	83
PCB153	76	78	74	66	94	67	90
PCB156	76	80	76	78	108	74	128 &
PCB158	78	81	76	68	94	66	104
PCB167	77	82	77	76	100	72	109
PCB169	75	76	74	70	107	62	147 &
PCB170/190	74	78	72	74	107	72	135 &
PCB171	75	74	72	69	94	69	107
PCB172	76	77	73	75	98	75	141 &
PCB173	73	71	71	70	92	71	106
PCB174	77	75	73	71	98	71	111
PCB175	75	68	70	69	87	65	92
PCB176	75	73	70	70	88	69	90
PCB177	77	74	74	70	98	74	115
PCB178	75	70	71	64	89	68	94
PCB180	77	79	75	77	108	74	136 &
PCB183	75	77	75	71	96	69	111
PCB184	75	76	72	74	90	67	90
PCB185	74	72	70	68	91	69	102
PCB187/182	74	73	72	70	91	73	97
PCB189	74	77	72	72	109	66	146 &
PCB191	78	75	73	71	101	71	120
PCB193	73	74	71	71	95	76	113
PCB194	71	73	68	82	108	76	143 &
PCB195	74	70	68	72	104	70	155 &
PCB197	75	72	70	73	92	80	110
PCB198	75	73	69	67	93	71	138 &
PCB199	76	68	67	65	98	77	117
PCB200	72	71	68	70	93	73	107
PCB201	72	70	70	73	91	76	98
PCB203/196	76	75	72	73	103	77	126 &
PCB205	77	73	68	71	109	71	141 &
PCB206	74	72	68	71	102	72	128 &
PCB207	74	73	68	70	97	74	118
PCB209	75	74	70	68	103	77	116
Biphenyl	NA	NA	NA	NA	NA	NA	NA

Surrogate Recovery (%)
PCB104
PCB14
PCB34
PCB112

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Laboratory Control Sample Data

Client Reporting Sample ID:						
Battelle Sample ID:	YW91LCS-R	YW69LCS	ZA16LCS-R	ZA18LCS	ZA14LCS	ZA19LCS
Extraction Batch ID:	01-209	01-201	01-309	01-309	01-308	01-308
Batch Matrix:	Sediment	Sediment	Water	Water	Water	Water
Sample Dilution Factor:	4.167	1.667	4.167	1.667	1.667	1.667
Reporting Units:	% Recovery	% Recovery	% Recovery	% Recovery	Recovery	Recovery
PCB						
PCB1	40 &	56	76	56	37 &	64
PCB3	39 &	57	75	59	35 &	61
PCB4/10	42	57	73	61	31 &	56
PCB6	44	59	69	63	33 &	59
PCB7/9	48	58	69	62	35 &	59
PCB8/5	43	62	71	66	35 &	61
PCB12/13	47	63	68	71	33 &	64
PCB16/32	46	61	70	69	29 &	60
PCB17	43	61	72	68	30 &	60
PCB18	49	64	73	72	31 &	60
PCB19	49	59	72	65	29 &	57
PCB21	49	64	69	74	35 &	66
PCB22	54	66	69	73	32 &	68
PCB24/27	49	60	69	66	30 &	60
PCB25	47	65	68	69	33 &	65
PCB26	50	63	69	71	32 &	64
PCB28	52	67	74	75	34 &	68
PCB29	49	64	68	69	32 &	61
PCB31	57	68	71	73	34 &	66
PCB33/20	56	63	75	76	34 &	66
PCB41/64/71	62	68	73	78	34 &	67
PCB42	58	65	76	80	36 &	69
PCB43	62	61	66	74	31 &	68
PCB44	58	66	73	76	31 &	66
PCB45	50	62	70	71	30 &	62
PCB46	52	63	70	72	29 &	63
PCB47/75	54	64	71	73	31 &	64
PCB48	54	69	71	74	29 &	68
PCB49	48	68	71	82	31 &	67
PCB51	51	62	69	69	30 &	62
PCB52	57	66	70	73	30 &	64
PCB53	51	62	71	68	30 &	63
PCB56/60	69	73	73	81	32 &	72
PCB59	56	66	69	72	35 &	66
PCB63	60	68	69	75	31 &	69
PCB66	67	71	72	78	33 &	72
PCB70/76	67	73	73	79	32 &	71
PCB74	70	72	73	78	33 &	71
PCB82	78	68	72	77	35 &	72
PCB83	70	69	67	74	32 &	68
PCB84	67	69	72	76	30 &	67
PCB85	70	73	71	78	32 &	70
PCB87/115	61	70	68	76	31 &	68
PCB89	60	62	71	79	30 &	71
PCB91	64	66	69	72	29 &	66
PCB92	75	69	72	77	31 &	69
PCB95	67	68	75	76	31 &	69
PCB97	74	72	70	78	32 &	68
PCB99	69	71	71	77	31 &	69
PCB100	64	65	71	73	30 &	66
PCB101/90	74	78	74	83	25 &	68
PCB105	80	78	77	103	40 &	81
PCB107	81	74	69	76	33 &	73
PCB110	77	71	69	77	38 &	70
PCB114	82	72	67	76	33 &	75
PCB118	78	76	72	81	36 &	78
PCB119	71	68	68	75	40	68
PCB124	70	73	71	79	35 &	76
PCB128	87	77	73	81	40	75
PCB129	72	69	66	75	31 &	69
PCB130	72	69	70	77	32 &	74
PCB131	71	68	68	72	31 &	69
PCB132	77	71	73	82	35 &	74
PCB134	85	67	66	71	30 &	67
PCB135/144	73	68	71	77	33 &	69
PCB136	78	68	72	74	36 &	67
PCB137	73	74	71	79	34 &	72

Laboratory Control Sample Data

Client Reporting Sample ID:						
Battelle Sample ID:	YW91LCS-R	YW69LCS	ZA16LCS-R	ZA18LCS	ZA14LCS	ZA19LCS
PCB138/160/163	91	73	71	80	35 &	74
PCB141	79	73	71	80	35 &	73
PCB146	86	73	72	79	36 &	73
PCB149	79	71	71	76	33 &	69
PCB151	77	68	72	76	33 &	69
PCB153	76	74	75	81	40	76
PCB156	86	78	75	85	40 &	81
PCB158	93	76	73	81	33 &	75
PCB167	87	80	72	83	38 &	80
PCB169	84	80	71	85	36 &	98
PCB170/190	94	78	69	76	37 &	78
PCB171	79	69	68	75	35 &	71
PCB172	80	73	68	75	35 &	76
PCB173	91	68	67	73	35 &	71
PCB174	88	73	69	76	37 &	70
PCB175	87	65	68	70	41	69
PCB176	79	68	70	73	31 &	70
PCB177	94	73	69	76	36 &	71
PCB178	78	69	67	72	31 &	70
PCB180	86	77	72	79	38 &	76
PCB183	85	71	71	77	37 &	71
PCB184	77	70	76	77	37 &	70
PCB185	75	70	66	73	36 &	71
PCB187/182	86	69	70	75	38 &	72
PCB189	89	83	69	76	31 &	76
PCB191	76	70	66	73	32 &	73
PCB193	84	69	66	73	32 &	74
PCB194	108	75	73	76	32 &	73
PCB195	104	71	65	68	34 &	67
PCB197	80	69	67	70	33 &	69
PCB198	82	68	65	70	31 &	70
PCB199	84	65	64	72	29 &	69
PCB200	76	68	66	70	30 &	67
PCB201	86	67	67	71	34 &	71
PCB203/196	88	71	68	73	31 &	72
PCB205	90	73	64	69	27 &	67
PCB206	102	70	65	69	26 &	61
PCB207	95	68	65	68	64	66
PCB209	92	67	64	65	21 &	61
Biphenyl	NA	NA	NA	NA	NA	NA

Surrogate Recovery (%)

PCB104
PCB14
PCB34
PCB112

U = Analyte not detected, "ND" reportec
& = QC value outside the accuracy or p
NA = Not Applicable.
J = Detected, but below the sample spe
Y = Peak area higher than the highest c
D = Diluted sample concentration repor

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		T-I-A-1	T-I-A-1	
Battelle Sample ID:		W2777	YX54MS	
Extraction Batch ID:		01-222	01-222	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		72.69	72.69	
Sample Dry Weight (g):	FI40 & FI41	3.65	1.85	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB1	361.08	46.48	109.32	NA
PCB3	360.36	5.33	79.96	38 &
PCB4/10	360.36	99.11	160.88	NA
PCB6	361.80	3.11	81.55	40
PCB7/9	361.80	1.52 J	70.89	35 &
PCB8/5	399.60	22.28	112.04	NA
PCB12/13	360.36	0.64 J	79.21	40
PCB16/32	361.80	41.93	121.59	NA
PCB17	361.80	23.87	114.21	NA
PCB18	398.00	9.45	105.51	45
PCB19	361.80	35.04	114.84	NA
PCB21	361.80	ND U	93.34	48
PCB22	361.80	2.60	94.67	47
PCB24/27	361.80	17.64	100.69	42
PCB25	360.36	2.79	94.50	47
PCB26	361.80	6.45	97.15	46
PCB28	399.60	19.88	127.77	50
PCB29	361.80	ND U	86.71	44
PCB31	399.60	11.54	114.20	47
PCB33/20	399.60	6.40	110.63	48
PCB41/64/71	398.00	27.14	158.62	NA
PCB42	399.60	11.55	133.96	57
PCB43	360.36	ND U	98.76	51
PCB44	399.60	20.67	133.47	52
PCB45	360.36	4.54	97.63	48
PCB46	361.80	1.73 J	95.82	48
PCB47/75	360.36	43.81	137.28	NA
PCB48	361.80	ND U	104.97	54
PCB49	398.00	48.92	159.02	NA
PCB51	361.80	20.81	113.88	NA
PCB52	399.60	48.09	155.04	NA
PCB53	361.80	29.43	125.78	NA
PCB56/60	399.60	12.96	133.80	56
PCB59	360.36	3.05	102.59	51
PCB63	360.36	2.06 J	101.06	51
PCB66	399.60	36.52	152.70	NA
PCB70/76	399.60	21.37	138.72	54
PCB74	399.60	20.50	142.26	56
PCB82	361.80	3.25	107.66	53
PCB83	360.36	2.83	105.84	53
PCB84	399.60	10.96	132.09	56
PCB85	398.00	5.49	126.80	56
PCB87/115	398.00	7.06	123.90	54
PCB89	360.36	ND U	111.66	57
PCB91	360.36	17.35	121.34	53
PCB92	399.60	9.89	131.31	56
PCB95	399.60	40.76	161.98	NA
PCB97	399.60	10.37	130.75	56
PCB99	400.00	30.62	150.47	NA
PCB100	361.80	3.11	104.37	52
PCB101/90	398.80	40.90	167.58	NA
PCB105	398.00	5.93	133.08	59
PCB107	361.80	3.15	111.92	56
PCB110	399.60	70.97	184.79	NA
PCB114	360.36	ND U	107.09	55
PCB118	400.00	33.81	164.06	NA
PCB119	361.80	3.91	108.48	53
PCB124	361.80	0.58 J	109.92	56
PCB128	398.00	6.46	139.14	62
PCB129	361.80	0.94 J	109.63	55
PCB130	360.36	2.63	117.84	59
PCB131	361.80	0.34 J	110.65	56
PCB132	399.60	10.44	154.00	66

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		T-I-A-1	T-I-A-1	
Battelle Sample ID:		W2777	YX54MS	
Extraction Batch ID:		01-222	01-222	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		72.69	72.69	
Sample Dry Weight (g):	FI40 & FI41	3.65	1.85	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB134	361.80	2.32 J	102.72	51
PCB135/144	399.60	8.44	135.37	59
PCB136	398.00	6.38	136.25	60
PCB137	399.60	1.25 J	121.96	56
PCB138/160/163	399.60	35.15	158.44	NA
PCB141	399.60	2.39 J	128.19	58
PCB146	398.00	8.04	135.63	59
PCB149	398.00	36.86	164.91	NA
PCB151	399.60	9.50	138.37	60
PCB153	398.00	34.04	168.36	NA
PCB156	399.60	1.96 J	142.81	65
PCB158	398.00	2.03 J	126.73	58
PCB167	400.00	1.26 J	137.31	63
PCB169	361.80	ND U	106.85	55
PCB170/190	399.60	5.19	144.78	64
PCB171	361.80	1.92 J	119.75	60
PCB172	360.72	0.36 J	123.10	63
PCB173	361.80	ND U	117.55	60
PCB174	398.00	3.68	140.19	63
PCB175	361.80	ND U	111.91	57
PCB176	360.36	0.94 J	123.01	63
PCB177	398.00	4.74	143.76	65
PCB178	361.80	1.57 J	115.91	58
PCB180	398.00	6.17	145.73	65
PCB183	398.00	2.22 J	133.64	61
PCB184	399.60	ND U	132.43	61
PCB185	360.36	ND U	116.25	60
PCB187/182	399.60	7.72	142.66	62
PCB189	361.80	0.34 J	115.57	59
PCB191	361.80	0.42 J	116.08	59
PCB193	360.36	0.64 J	124.43	63
PCB194	398.00	1.20 J	135.50	62
PCB195	299.80	0.43 J	89.89	55
PCB197	360.36	ND U	131.10	67
PCB198	361.44	0.94 J	114.89	58
PCB199	362.16	2.00 J	125.30	63
PCB200	361.80	ND U	124.63	64
PCB201	360.36	0.57 J	126.29	64
PCB203/196	398.00	1.71 J	144.58	66
PCB205	271.36	ND U	84.22	57
PCB206	299.20	1.10 J	94.27	58
PCB207	270.82	0.23 J	90.96	62
PCB209	299.80	0.52 J	111.48	68
Biphenyl	NA	1.52 J	1.39 J	NA
Surrogate Recovery (%)				
PCB104		75	57	
PCB14		58	44	
PCB34		58	44	
PCB112		73	57	

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		T-L-A-1	T-L-A-1	
Battelle Sample ID:		W2629	YW83MS	
Extraction Batch ID:		01-206	01-206	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		69.72	69.72	
Sample Dry Weight (g):	FI40 & FI41	4.74	2.00	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB1	451.35	28.41	126.29	NA
PCB3	450.45	5.02	109.50	46
PCB4/10	450.45	115.98	241.23	NA
PCB6	452.25	2.19	113.60	49
PCB7/9	452.25	0.53 J	109.73	48
PCB8/5	499.50	15.42	152.61	55
PCB12/13	450.45	0.30 J	125.49	55
PCB16/32	452.25	14.39	136.49	54
PCB17	452.25	9.70	130.06	53
PCB18	497.50	4.58	136.61	53
PCB19	452.25	39.86	156.62	NA
PCB21	452.25	ND U	114.07	50
PCB22	452.25	0.97 J	134.87	59
PCB24/27	452.25	11.52	130.42	52
PCB25	450.45	1.28 J	133.64	59
PCB26	452.25	3.03	131.39	57
PCB28	499.50	6.80	172.86	66
PCB29	452.25	ND U	124.59	55
PCB31	499.50	5.72	150.68	58
PCB33/20	499.50	1.95 J	162.07	64
PCB41/64/71	497.50	8.52	174.81	67
PCB42	499.50	3.05	167.92	66
PCB43	450.45	ND U	116.55	52
PCB44	499.50	6.07	156.08	60
PCB45	450.45	1.72 J	120.22	53
PCB46	452.25	0.55 J	120.05	53
PCB47/75	450.45	13.49	148.29	60
PCB48	452.25	1.13 J	135.36	59
PCB49	497.50	15.96	196.95	73
PCB51	452.25	9.37	133.87	55
PCB52	499.50	17.14	169.09	61
PCB53	452.25	14.17	140.21	56
PCB56/60	499.50	5.24	175.09	68
PCB59	450.45	0.90 J	119.86	53
PCB63	450.45	0.70 J	138.67	61
PCB66	499.50	10.59	182.14	69
PCB70/76	499.50	7.23	179.48	69
PCB74	499.50	7.10	179.39	69
PCB82	452.25	1.08 J	144.38	63
PCB83	450.45	0.83 J	135.18	60
PCB84	499.50	3.05	156.33	61
PCB85	497.50	2.13	167.17	66
PCB87/115	497.50	3.71	163.99	64
PCB89	450.45	5.35	160.86	69
PCB91	450.45	5.26	139.59	60
PCB92	499.50	2.62	158.74	62
PCB95	499.50	12.93	169.48	63
PCB97	499.50	2.94	164.18	64
PCB99	500.00	7.04	171.88	66
PCB100	452.25	1.21 J	130.46	57
PCB101/90	498.50	5.58	177.55	69
PCB105	497.50	3.12	192.55	76
PCB107	452.25	1.03 J	154.59	68
PCB110	499.50	19.35	193.27	69
PCB114	450.45	0.28 J	152.00	67
PCB118	500.00	10.56	201.74	76
PCB119	452.25	0.91 J	138.33	61
PCB124	452.25	0.28 J	154.71	68
PCB128	497.50	2.05 J	189.33	75
PCB129	452.25	0.30 J	151.35	67
PCB130	450.45	0.87 J	147.40	65
PCB131	452.25	0.17 J	136.78	60
PCB132	499.50	3.21	174.78	69

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		T-L-A-1	T-L-A-1	
Battelle Sample ID:		W2629	YW83MS	
Extraction Batch ID:		01-206	01-206	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		69.72	69.72	
Sample Dry Weight (g):	FI40 & FI41	4.74	2.00	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB134	452.25	0.95 J	136.98	60
PCB135/144	499.50	2.41	157.61	62
PCB136	497.50	2.14	151.60	60
PCB137	499.50	0.57 J	176.72	70
PCB138/160/163	499.50	12.69	193.85	72
PCB141	499.50	0.89 J	164.32	65
PCB146	497.50	2.08 J	174.48	69
PCB149	497.50	9.95	177.02	67
PCB151	499.50	2.27	156.92	62
PCB153	497.50	9.26	184.02	70
PCB156	499.50	0.93 J	188.26	75
PCB158	497.50	0.82 J	170.25	68
PCB167	500.00	0.51 J	185.87	74
PCB169	452.25	ND U	175.47	77
PCB170/190	499.50	1.50 J	185.29	73
PCB171	452.25	0.47 J	148.77	65
PCB172	450.90	0.16 J	153.98	68
PCB173	452.25	ND U	143.96	64
PCB174	497.50	1.40 J	170.01	68
PCB175	452.25	0.17 J	135.72	60
PCB176	450.45	0.20 J	141.95	63
PCB177	497.50	1.13 J	171.82	68
PCB178	452.25	0.64 J	142.50	63
PCB180	497.50	2.02 J	188.67	75
PCB183	497.50	0.60 J	168.46	67
PCB184	499.50	ND U	160.97	64
PCB185	450.45	ND U	143.91	64
PCB187/182	499.50	2.05 J	168.17	66
PCB189	452.25	ND U	178.65	79
PCB191	452.25	ND U	160.26	71
PCB193	450.45	0.21 J	144.52	64
PCB194	497.50	0.48 J	176.53	71
PCB195	374.75	0.31 J	127.18	68
PCB197	450.45	ND U	144.40	64
PCB198	451.80	ND U	142.64	63
PCB199	452.70	0.56 J	147.00	65
PCB200	452.25	ND U	142.42	63
PCB201	450.45	0.31 J	140.53	62
PCB203/196	497.50	0.44 J	172.34	69
PCB205	339.20	ND U	109.29	64
PCB206	374.00	0.27 J	118.42	63
PCB207	338.53	ND U	107.47	63
PCB209	374.75	ND U	119.44	64
Biphenyl	NA	3.71	5.03 J	NA
Surrogate Recovery (%)				
PCB104		73	58	
PCB14		70	54	
PCB34		67	53	
PCB112		77	63	

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		T-L-B-1	T-L-B-1	
Battelle Sample ID:		W2718	YW86MS	
Extraction Batch ID:		01-207	01-207	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		72.38	72.38	
Sample Dry Weight (g):	FI40 & FI41	3.05	1.53	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB1	361.08	7.95	156.53	63
PCB3	360.36	3.31	107.24	44
PCB4/10	360.36	59.52	177.17	NA
PCB6	361.80	2.12 J	117.33	49
PCB7/9	361.80	0.56 J	114.60	48
PCB8/5	399.60	17.67	150.62	51
PCB12/13	360.36	0.68 J	111.16	47
PCB16/32	361.80	40.44	165.54	NA
PCB17	361.80	17.82	141.52	52
PCB18	398.00	10.58	143.53	51
PCB19	361.80	42.03	171.35	NA
PCB21	361.80	ND U	120.15	51
PCB22	361.80	3.43	124.54	51
PCB24/27	361.80	17.64	123.97	45
PCB25	360.36	2.71 J	120.96	50
PCB26	361.80	6.83	123.09	49
PCB28	399.60	19.16	165.75	56
PCB29	361.80	ND U	112.95	48
PCB31	399.60	14.06	146.89	51
PCB33/20	399.60	5.84	167.70	62
PCB41/64/71	398.00	29.22	200.33	NA
PCB42	399.60	12.34	169.93	60
PCB43	360.36	ND U	100.03	42
PCB44	399.60	27.00	176.68	NA
PCB45	360.36	5.57	125.68	51
PCB46	361.80	1.83 J	130.84	54
PCB47/75	360.36	34.22	184.81	NA
PCB48	361.80	5.32	126.74	51
PCB49	398.00	44.64	227.38	NA
PCB51	361.80	17.20	154.81	58
PCB52	399.60	48.64	200.31	NA
PCB53	361.80	25.57	166.26	NA
PCB56/60	399.60	21.21	181.20	61
PCB59	360.36	3.13	125.77	52
PCB63	360.36	2.16 J	130.55	54
PCB66	399.60	40.68	205.07	NA
PCB70/76	399.60	25.66	186.93	62
PCB74	399.60	24.17	180.02	60
PCB82	361.80	4.71	142.76	58
PCB83	360.36	2.71 J	130.58	54
PCB84	399.60	9.85	163.84	59
PCB85	398.00	7.74	168.12	62
PCB87/115	398.00	13.96	177.85	63
PCB89	360.36	ND U	187.30	79
PCB91	360.36	11.12	150.69	59
PCB92	399.60	9.19	171.87	62
PCB95	399.60	39.23	212.03	NA
PCB97	399.60	11.73	168.28	60
PCB99	400.00	23.27	186.26	62
PCB100	361.80	2.10 J	144.18	60
PCB101/90	398.80	47.14	187.35	NA
PCB105	398.00	13.46	198.51	71
PCB107	361.80	3.11	147.72	61
PCB110	399.60	59.25	231.34	NA
PCB114	360.36	0.86 J	139.15	59
PCB118	400.00	37.42	221.00	NA
PCB119	361.80	2.24 J	129.94	54
PCB124	361.80	0.88 J	146.42	61
PCB128	398.00	7.75	185.93	68
PCB129	361.80	1.73 J	146.48	61
PCB130	360.36	2.36 J	153.69	64
PCB131	361.80	0.54 J	138.70	58
PCB132	399.60	11.30	191.20	69

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		T-L-B-1	T-L-B-1	
Battelle Sample ID:		W2718	YW86MS	
Extraction Batch ID:		01-207	01-207	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		72.38	72.38	
Sample Dry Weight (g):	FI40 & FI41	3.05	1.53	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB134	361.80	1.87 J	119.06	49
PCB135/144	399.60	6.59	151.08	55
PCB136	398.00	4.91	180.12	67
PCB137	399.60	2.13 J	168.42	64
PCB138/160/163	399.60	46.44	237.76	NA
PCB141	399.60	3.62	176.02	66
PCB146	398.00	6.48	171.00	63
PCB149	398.00	25.31	188.60	63
PCB151	399.60	6.61	156.42	57
PCB153	398.00	29.38	215.59	NA
PCB156	399.60	3.36	194.86	73
PCB158	398.00	3.21 J	167.52	63
PCB167	400.00	1.68 J	193.44	73
PCB169	361.80	ND U	153.74	65
PCB170/190	399.60	4.93	177.76	66
PCB171	361.80	1.27 J	152.53	64
PCB172	360.72	0.34 J	160.63	68
PCB173	361.80	ND U	151.62	64
PCB174	398.00	3.51	177.71	67
PCB175	361.80	0.18 J	137.99	58
PCB176	360.36	0.99 J	164.02	69
PCB177	398.00	3.45	170.42	64
PCB178	361.80	1.52 J	129.23	54
PCB180	398.00	6.06	195.05	73
PCB183	398.00	1.89 J	177.70	67
PCB184	399.60	ND U	194.67	74
PCB185	360.36	ND U	155.17	66
PCB187/182	399.60	5.38	164.77	61
PCB189	361.80	0.31 J	206.99	87
PCB191	361.80	ND U	146.74	62
PCB193	360.36	0.44 J	140.14	59
PCB194	398.00	1.06 J	184.42	70
PCB195	299.80	ND U	122.48	62
PCB197	360.36	ND U	159.69	68
PCB198	361.44	ND U	140.25	59
PCB199	362.16	1.67 J	131.39	55
PCB200	361.80	ND U	153.24	65
PCB201	360.36	ND U	152.85	65
PCB203/196	398.00	1.22 J	167.55	64
PCB205	271.36	ND U	109.91	62
PCB206	299.20	0.60 J	115.23	59
PCB207	270.82	ND U	110.63	62
PCB209	299.80	0.24 J	116.96	59
Biphenyl	NA	0.65 J	2.09 J	NA
Surrogate Recovery (%)				
PCB104		62	76	
PCB14		50	55	
PCB34		48	50	
PCB112		51	53	

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		T-O-A-1	T-O-A-1	
Battelle Sample ID:		W2609	YW80MS	
Extraction Batch ID:		01-204	01-204	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		63.06	63.06	
Sample Dry Weight (g):	FI40 & FI41	5.56	2.53	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB1	361.08	25.28	65.04	NA
PCB3	360.36	6.49	56.10	35 &
PCB4/10	360.36	195.75	210.68	NA
PCB6	361.80	5.82	65.51	42
PCB7/9	361.80	1.73	59.67	40
PCB8/5	399.60	52.08	117.76	NA
PCB12/13	360.36	1.43 J	72.83	50
PCB16/32	361.80	103.45	172.87	NA
PCB17	361.80	47.35	117.22	NA
PCB18	398.00	28.07	105.83	NA
PCB19	361.80	116.08	168.65	NA
PCB21	361.80	ND U	67.73	47
PCB22	361.80	7.78	93.50	60
PCB24/27	361.80	44.09	114.04	NA
PCB25	360.36	6.41	86.92	56
PCB26	361.80	18.34	100.43	NA
PCB28	399.60	41.69	133.66	NA
PCB29	361.80	ND U	78.61	55
PCB31	399.60	35.91	130.17	NA
PCB33/20	399.60	8.39	109.53	64
PCB41/64/71	398.00	58.40	165.25	NA
PCB42	399.60	20.11	129.57	NA
PCB43	360.36	ND U	93.05	65
PCB44	399.60	44.11	150.44	NA
PCB45	360.36	10.48	91.19	57
PCB46	361.80	3.76	85.48	57
PCB47/75	360.36	71.90	162.73	NA
PCB48	361.80	6.36	89.89	58
PCB49	398.00	80.34	179.26	NA
PCB51	361.80	37.88	119.16	NA
PCB52	399.60	92.35	196.11	NA
PCB53	361.80	54.79	136.54	NA
PCB56/60	399.60	40.81	159.63	NA
PCB59	360.36	6.35	96.18	63
PCB63	360.36	5.20	103.65	69
PCB66	399.60	72.84	192.44	NA
PCB70/76	399.60	54.98	174.73	NA
PCB74	399.60	45.87	162.69	NA
PCB82	361.80	9.28	115.84	74
PCB83	360.36	5.80	106.38	71
PCB84	399.60	19.21	128.29	NA
PCB85	398.00	15.77	134.87	NA
PCB87/115	398.00	30.49	149.25	NA
PCB89	360.36	39.08	134.43	NA
PCB91	360.36	23.12	123.29	NA
PCB92	399.60	19.08	134.83	NA
PCB95	399.60	67.75	179.76	NA
PCB97	399.60	22.81	141.16	NA
PCB99	400.00	47.54	164.79	NA
PCB100	361.80	3.64	97.50	66
PCB101/90	398.80	38.21	178.97	NA
PCB105	398.00	27.38	155.97	NA
PCB107	361.80	7.55	117.59	77
PCB110	399.60	117.49	247.76	NA
PCB114	360.36	1.80	109.66	76
PCB118	400.00	77.78	211.11	NA
PCB119	361.80	5.36	107.72	71
PCB124	361.80	2.00	109.54	75
PCB128	398.00	14.25	145.08	83
PCB129	361.80	2.79	111.48	76
PCB130	360.36	5.36	112.19	75
PCB131	361.80	0.93 J	105.54	73
PCB132	399.60	23.41	148.09	NA
PCB134	361.80	4.66	109.26	73
PCB135/144	399.60	13.23	131.38	75
PCB136	398.00	9.29	119.59	70
PCB137	399.60	3.89	124.67	76
PCB138/160/163	399.60	88.45	222.34	NA
PCB141	399.60	8.06	133.46	79
PCB146	398.00	13.28	137.14	79
PCB149	398.00	51.94	175.93	NA
PCB151	399.60	13.16	130.37	74
PCB153	398.00	59.53	189.64	NA
PCB156	399.60	7.89	129.50	77
PCB158	398.00	6.34	128.33	77
PCB167	400.00	3.21	126.89	78
PCB169	361.80	ND U	112.06	78

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		T-O-A-1	T-O-A-1	
Battelle Sample ID:		W2609	YW80MS	
Extraction Batch ID:		01-204	01-204	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		63.06	63.06	
Sample Dry Weight (g):	FI40 & FI41	5.56	2.53	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB170/190	399.60	9.38	131.44	77
PCB171	361.80	2.40	108.99	74
PCB172	360.72	0.66 J	106.12	74
PCB173	361.80	ND U	104.46	73
PCB174	398.00	6.37	126.39	76
PCB175	361.80	ND U	101.67	71
PCB176	360.36	0.93 J	105.79	74
PCB177	398.00	5.82	124.31	75
PCB178	361.80	2.12	104.19	71
PCB180	398.00	12.42	133.71	77
PCB183	398.00	3.42	126.44	78
PCB184	399.60	ND U	117.50	74
PCB185	360.36	0.51 J	104.67	73
PCB187/182	399.60	9.22	126.62	74
PCB189	361.80	0.64 J	132.45	92
PCB191	361.80	0.33 J	106.36	74
PCB193	360.36	0.85 J	105.38	73
PCB194	398.00	1.70 J	109.61	69
PCB195	299.80	0.97 J	87.60	73
PCB197	360.36	ND U	99.74	70
PCB198	361.44	ND U	101.28	71
PCB199	362.16	2.54	99.88	68
PCB200	361.80	0.27 J	95.02	66
PCB201	360.36	ND U	99.42	70
PCB203/196	398.00	2.00	112.25	70
PCB205	271.36	ND U	76.02	71
PCB206	299.20	1.29 J	83.27	69
PCB207	270.82	0.21 J	76.94	72
PCB209	299.80	0.44 J	83.47	70
Biphenyl	NA	0.74 J	1.24 J	NA
Surrogate Recovery (%)				
PCB104		66	63	
PCB14		53	48	
PCB34		59	55	
PCB112		76	75	

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		T-O-B-1	T-O-B-1	
Battelle Sample ID:		W2649	YW89MS	
Extraction Batch ID:		01-208	01-208	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		68.62	68.62	
Sample Dry Weight (g):	FI40 & FI41	2.66	2.42	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB1	361.08	79.62	166.68	NA
PCB3	360.36	21.06	92.79	48
PCB4/10	360.36	563.90	776.14	NA
PCB6	361.80	19.41	101.76	55
PCB7/9	361.80	4.91	80.77	51
PCB8/5	399.60	195.71	314.20	NA
PCB12/13	360.36	6.03	88.94	56
PCB16/32	361.80	336.07	496.48	NA
PCB17	361.80	157.30	267.01	NA
PCB18	398.00	83.53	195.44	NA
PCB19	361.80	378.42	504.14	NA
PCB21	361.80	ND U	82.21	55
PCB22	361.80	16.85	112.19	64
PCB24/27	361.80	153.54	256.77	NA
PCB25	360.36	18.59	113.20	64
PCB26	361.80	61.69	159.37	NA
PCB28	399.60	92.04	211.44	NA
PCB29	361.80	ND U	90.82	61
PCB31	399.60	105.41	226.33	NA
PCB33/20	399.60	16.14	141.04	76
PCB41/64/71	398.00	148.19	271.95	NA
PCB42	399.60	48.77	171.68	NA
PCB43	360.36	ND U	95.76	64
PCB44	399.60	103.74	221.49	NA
PCB45	360.36	29.94	121.32	NA
PCB46	361.80	9.84	99.65	60
PCB47/75	360.36	206.75	315.78	NA
PCB48	361.80	17.55	100.32	55
PCB49	398.00	238.77	352.57	NA
PCB51	361.80	142.52	251.67	NA
PCB52	399.60	269.00	383.48	NA
PCB53	361.80	219.52	320.56	NA
PCB56/60	399.60	80.75	206.89	NA
PCB59	360.36	15.79	110.83	64
PCB63	360.36	12.91	113.56	68
PCB66	399.60	150.81	281.76	NA
PCB70/76	399.60	121.41	246.96	NA
PCB74	399.60	99.47	236.17	NA
PCB82	361.80	18.35	122.05	69
PCB83	360.36	13.52	112.11	66
PCB84	399.60	51.27	163.25	NA
PCB85	398.00	33.66	154.08	NA
PCB87/115	398.00	54.84	184.17	NA
PCB89	360.36	93.61	212.45	NA
PCB91	360.36	75.93	177.53	NA
PCB92	399.60	51.15	162.00	NA
PCB95	399.60	195.59	307.98	NA
PCB97	399.60	46.07	166.65	NA
PCB99	400.00	120.02	230.24	NA
PCB100	361.80	10.89	106.28	64
PCB101/90	398.80	89.16	179.65	NA
PCB105	398.00	52.00	182.04	NA
PCB107	361.80	17.62	124.09	71
PCB110	399.60	311.91	419.14	NA
PCB114	360.36	3.94	108.32	70
PCB118	400.00	168.65	297.68	NA
PCB119	361.80	15.06	115.73	67
PCB124	361.80	4.44	106.17	68
PCB128	398.00	30.41	145.19	NA
PCB129	361.80	6.71	104.10	65
PCB130	360.36	11.86	111.65	67
PCB131	361.80	1.98 J	101.90	67
PCB132	399.60	55.41	172.80	NA
PCB134	361.80	11.59	111.09	67
PCB135/144	399.60	34.83	147.75	NA
PCB136	398.00	26.11	134.16	66
PCB137	399.60	7.71	128.97	73
PCB138/160/163	399.60	202.14	331.06	NA
PCB141	399.60	17.31	141.27	75

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		T-O-B-1	T-O-B-1	
Battelle Sample ID:		W2649	YW89MS	
Extraction Batch ID:		01-208	01-208	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		68.62	68.62	
Sample Dry Weight (g):	FI40 & FI41	2.66	2.42	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB146	398.00	33.39	149.37	NA
PCB149	398.00	134.34	250.09	NA
PCB151	399.60	35.39	146.87	NA
PCB153	398.00	140.84	254.37	NA
PCB156	399.60	16.35	147.77	80
PCB158	398.00	14.01	137.86	75
PCB167	400.00	6.59	136.69	79
PCB169	361.80	ND U	104.78	70
PCB170/190	399.60	18.23	153.43	82
PCB171	361.80	5.44	110.41	70
PCB172	360.72	1.19 J	106.93	71
PCB173	361.80	ND U	100.72	67
PCB174	398.00	13.25	134.61	74
PCB175	361.80	ND U	96.74	65
PCB176	360.36	2.43 J	101.28	66
PCB177	398.00	12.79	133.68	73
PCB178	361.80	5.01	103.31	66
PCB180	398.00	26.16	163.39	83
PCB183	398.00	7.07	127.47	73
PCB184	399.60	ND U	115.56	70
PCB185	360.36	1.54 J	103.30	68
PCB187/182	399.60	19.99	139.90	73
PCB189	361.80	1.57 J	158.96	105
PCB191	361.80	ND U	108.97	73
PCB193	360.36	1.94 J	108.33	71
PCB194	398.00	3.42 J	129.34	77
PCB195	299.80	2.46 J	96.13	76
PCB197	360.36	ND U	97.81	66
PCB198	361.44	ND U	98.97	66
PCB199	362.16	4.06	105.22	68
PCB200	361.80	ND U	95.97	64
PCB201	360.36	ND U	98.72	66
PCB203/196	398.00	3.81	122.06	72
PCB205	271.36	ND U	82.52	74
PCB206	299.20	2.19 J	96.18	76
PCB207	270.82	ND U	82.64	74
PCB209	299.80	ND U	95.62	77
Biphenyl	NA	2.18 J	2.37 J	NA
Surrogate Recovery (%)				
PCB104		64	66	
PCB14		54	57	
PCB34		62	65	
PCB112		70	71	

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		T-O-C-1	T-O-C-1	
Battelle Sample ID:		W2664	YW73MS-R	
Extraction Batch ID:		01-202	01-202	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	4.167	
Sample Moisture Content (%):		62.56	62.56	
Sample Dry Weight (g):	FI40 & FI41	5.42	2.76	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB1	361.08	35.56	106.41	NA
PCB3	360.36	6.83	75.46	53
PCB4/10	360.36	179.10	291.48	NA
PCB6	361.80	6.56	84.10	59
PCB7/9	361.80	1.87	79.03	59
PCB8/5	399.60	60.30	149.27	NA
PCB12/13	360.36	1.61	79.43	60
PCB16/32	361.80	101.54	203.75	NA
PCB17	361.80	45.36	142.18	NA
PCB18	398.00	27.99	133.57	NA
PCB19	361.80	105.87	216.41	NA
PCB21	361.80	ND U	76.42	58
PCB22	361.80	8.07	98.57	69
PCB24/27	361.80	41.52	130.37	NA
PCB25	360.36	6.29	92.15	66
PCB26	361.80	18.39	107.82	NA
PCB28	399.60	41.75	147.49	NA
PCB29	361.80	0.43 J	84.29	64
PCB31	399.60	37.67	136.63	NA
PCB33/20	399.60	8.69	112.24	72
PCB41/64/71	398.00	56.50	170.03	NA
PCB42	399.60	19.63	131.46	NA
PCB43	360.36	ND U	90.96	70
PCB44	399.60	44.57	156.01	NA
PCB45	360.36	10.40	97.11	66
PCB46	361.80	3.67	92.81	68
PCB47/75	360.36	65.35	166.21	NA
PCB48	361.80	9.42	96.68	67
PCB49	398.00	79.52	191.42	NA
PCB51	361.80	35.24	128.42	NA
PCB52	399.60	90.92	204.51	NA
PCB53	361.80	53.01	151.22	NA
PCB56/60	399.60	37.61	155.79	NA
PCB59	360.36	5.46	99.22	72
PCB63	360.36	4.58	101.09	74
PCB66	399.60	69.02	186.17	NA
PCB70/76	399.60	52.74	165.93	NA
PCB74	399.60	43.93	159.03	NA
PCB82	361.80	8.52	110.31	78
PCB83	360.36	4.73	104.54	77
PCB84	399.60	18.11	126.96	NA
PCB85	398.00	13.49	125.98	78
PCB87/115	398.00	26.30	147.20	NA
PCB89	360.36	24.75	125.84	NA
PCB91	360.36	20.34	123.09	NA
PCB92	399.60	17.18	133.05	NA
PCB95	399.60	62.50	180.21	NA
PCB97	399.60	19.69	142.18	NA
PCB99	400.00	40.16	162.00	NA
PCB100	361.80	3.18	99.05	73
PCB101/90	398.80	41.69	153.16	NA
PCB105	398.00	24.12	139.23	NA
PCB107	361.80	6.01	110.94	80
PCB110	399.60	103.12	235.50	NA
PCB114	360.36	1.54	103.70	78
PCB118	400.00	66.78	199.24	NA
PCB119	361.80	4.25	107.56	79
PCB124	361.80	2.22	97.57	73
PCB128	398.00	12.24	127.88	80
PCB129	361.80	2.49	107.72	80
PCB130	360.36	4.27	104.22	77
PCB131	361.80	0.73 J	101.20	77
PCB132	399.60	20.41	139.22	NA
PCB134	361.80	3.67	106.81	79
PCB135/144	399.60	11.18	124.94	79
PCB136	398.00	8.12	119.82	78
PCB137	399.60	3.35	120.11	81
PCB138/160/163	399.60	76.31	213.76	NA
PCB141	399.60	6.93	128.11	84
PCB146	398.00	10.97	129.87	83
PCB149	398.00	44.81	170.52	NA
PCB151	399.60	11.45	128.03	81
PCB153	398.00	51.89	177.35	NA
PCB156	399.60	6.34	129.50	85
PCB158	398.00	5.19	125.62	84
PCB167	400.00	2.50	120.05	81
PCB169	361.80	ND U	106.88	82

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		T-O-C-1	T-O-C-1	
Battelle Sample ID:		W2664	YW73MS-R	
Extraction Batch ID:		01-202	01-202	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	4.167	
Sample Moisture Content (%):		62.56	62.56	
Sample Dry Weight (g):	FI40 & FI41	5.42	2.76	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB170/190	399.60	8.72	125.42	81
PCB171	361.80	2.15	111.71	84
PCB172	360.72	0.51 J	105.95	81
PCB173	361.80	0.24 J	101.66	77
PCB174	398.00	5.31	124.01	82
PCB175	361.80	0.38 J	101.48	77
PCB176	360.36	0.84 J	102.29	78
PCB177	398.00	4.91	121.38	81
PCB178	361.80	1.67	107.27	81
PCB180	398.00	10.54	130.31	83
PCB183	398.00	2.78	121.14	82
PCB184	399.60	ND U	115.80	80
PCB185	360.36	0.47 J	102.84	78
PCB187/182	399.60	7.71	127.86	83
PCB189	361.80	0.58 J	129.40	98
PCB191	361.80	0.27 J	105.15	80
PCB193	360.36	0.88 J	103.40	79
PCB194	398.00	1.28 J	115.44	79
PCB195	299.80	0.66 J	84.42	77
PCB197	360.36	ND U	100.74	77
PCB198	361.44	ND U	99.07	76
PCB199	362.16	1.73	95.67	72
PCB200	361.80	0.28 J	98.14	75
PCB201	360.36	0.63 J	103.16	79
PCB203/196	398.00	1.92	111.82	76
PCB205	271.36	0.12 J	79.05	80
PCB206	299.20	0.83 J	85.94	79
PCB207	270.82	0.10 J	74.54	76
PCB209	299.80	0.29 J	85.23	78
Biphenyl	NA	1.17 J	2.71 J	NA
Surrogate Recovery (%)				
PCB104		65	72	
PCB14		56	59	
PCB34		60	64	
PCB112		66	77	

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		C1-A	C1-A	
Battelle Sample ID:		W2738	YW92MS	
Extraction Batch ID:		01-209	01-209	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		25.36	25.36	
Sample Dry Weight (g):	FI40 & FI41	14.24	7.67	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB1	361.08	10.71	31.98	NA
PCB3	360.36	2.26	22.28	43
PCB4/10	360.36	100.12	81.04	NA
PCB6	361.80	34.32	42.23	NA
PCB7/9	361.80	17.31	32.82	NA
PCB8/5	399.60	207.18	123.45	NA
PCB12/13	360.36	6.67	26.00	NA
PCB16/32	361.80	183.98	119.02	NA
PCB17	361.80	119.66	86.52	NA
PCB18	398.00	289.39	170.70	NA
PCB19	361.80	34.31	46.04	NA
PCB21	361.80	ND U	33.05	70
PCB22	361.80	106.91	80.63	NA
PCB24/27	361.80	22.78	38.33	NA
PCB25	360.36	19.25	36.32	NA
PCB26	361.80	44.00	48.84	NA
PCB28	399.60	320.84	172.54	NA
PCB29	361.80	2.25	25.67	50
PCB31	399.60	262.78	157.56	NA
PCB33/20	399.60	196.63	122.23	NA
PCB41/64/71	398.00	149.62	110.67	NA
PCB42	399.60	63.59	63.39	NA
PCB43	360.36	ND U	29.33	62
PCB44	399.60	148.52	109.40	NA
PCB45	360.36	33.89	45.02	NA
PCB46	361.80	13.67	33.52	NA
PCB47/75	360.36	36.89	50.76	NA
PCB48	361.80	49.85	50.86	NA
PCB49	398.00	130.29	98.05	NA
PCB51	361.80	8.98	31.04	NA
PCB52	399.60	157.85	113.98	NA
PCB53	361.80	32.47	45.18	NA
PCB56/60	399.60	127.89	97.94	NA
PCB59	360.36	13.85	35.56	NA
PCB63	360.36	4.98	29.39	52
PCB66	399.60	149.26	110.34	NA
PCB70/76	399.60	163.67	117.47	NA
PCB74	399.60	87.06	79.26	NA
PCB82	361.80	9.17	32.79	NA
PCB83	360.36	3.18	28.95	55
PCB84	399.60	16.82	41.73	NA
PCB85	398.00	11.63	39.64	NA
PCB87/115	398.00	28.09	47.87	NA
PCB89	360.36	25.08	40.42	NA
PCB91	360.36	8.48	32.19	NA
PCB92	399.60	7.16	36.68	NA
PCB95	399.60	43.20	57.64	NA
PCB97	399.60	18.59	43.67	NA
PCB99	400.00	22.81	46.08	NA
PCB100	361.80	0.26 J	27.02	57
PCB101/90	398.80	25.50	52.52	NA
PCB105	398.00	22.09	51.63	NA
PCB107	361.80	2.64	30.74	60
PCB110	399.60	58.39	67.28	NA
PCB114	360.36	1.36	28.99	59
PCB118	400.00	41.11	60.58	NA
PCB119	361.80	0.85	28.18	58
PCB124	361.80	1.41	30.00	61
PCB128	398.00	3.99	41.39	72
PCB129	361.80	1.12	30.03	61
PCB130	360.36	1.08	29.82	61
PCB131	361.80	0.34 J	28.02	59
PCB132	399.60	6.29	37.42	NA

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		C1-A	C1-A	
Battelle Sample ID:		W2738	YW92MS	
Extraction Batch ID:		01-209	01-209	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		25.36	25.36	
Sample Dry Weight (g):	FI40 & FI41	14.24	7.67	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB134	361.80	0.97	27.52	56
PCB135/144	399.60	2.56	32.49	57
PCB136	398.00	2.10	32.20	58
PCB137	399.60	1.24	35.27	65
PCB138/160/163	399.60	21.81	50.43	NA
PCB141	399.60	3.01	34.81	61
PCB146	398.00	1.80	33.55	61
PCB149	398.00	10.41	39.33	NA
PCB151	399.60	2.32	32.79	58
PCB153	398.00	11.45	42.91	NA
PCB156	399.60	2.10	41.48	76
PCB158	398.00	2.11	35.65	65
PCB167	400.00	0.71	37.00	70
PCB169	361.80	ND U	36.29	77
PCB170/190	399.60	2.13	39.34	71
PCB171	361.80	0.53 J	30.50	63
PCB172	360.72	0.12 J	32.28	68
PCB173	361.80	0.17 J	28.94	61
PCB174	398.00	1.41	35.02	65
PCB175	361.80	0.09 J	28.13	59
PCB176	360.36	0.19 J	28.37	60
PCB177	398.00	0.77	34.64	65
PCB178	361.80	0.29 J	29.23	61
PCB180	398.00	2.78	40.37	72
PCB183	398.00	0.78	33.99	64
PCB184	399.60	ND U	33.52	64
PCB185	360.36	0.15 J	28.77	61
PCB187/182	399.60	1.11	33.59	62
PCB189	361.80	ND U	36.07	76
PCB191	361.80	0.08 J	31.78	67
PCB193	360.36	0.13 J	29.19	62
PCB194	398.00	0.33 J	38.79	74
PCB195	299.80	0.23 J	27.91	71
PCB197	360.36	ND U	28.81	61
PCB198	361.44	ND U	30.29	64
PCB199	362.16	0.37 J	28.98	61
PCB200	361.80	ND U	28.81	61
PCB201	360.36	ND U	28.37	60
PCB203/196	398.00	0.36 J	35.04	67
PCB205	271.36	ND U	24.52	69
PCB206	299.20	0.16 J	25.60	65
PCB207	270.82	ND U	22.17	63
PCB209	299.80	ND U	24.05	61
Biphenyl	NA	1.39	2.08 J	NA
Surrogate Recovery (%)				
PCB104		64	61	
PCB14		53	55	
PCB34		56	52	
PCB112		64	61	

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		C-0A	C-0A	
Battelle Sample ID:		W2704	YW70MS	
Extraction Batch ID:		01-201	01-201	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		21.36	21.36	
Sample Dry Weight (g):	FI40 & FI41	12.86	7.09	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB1	361.08	ND U	19.94	39 &
PCB3	360.36	ND U	20.69	41
PCB4/10	360.36	0.06 J	20.45	40
PCB6	361.80	0.02 J	21.26	42
PCB7/9	361.80	ND U	21.23	42
PCB8/5	399.60	0.08 J	24.51	43
PCB12/13	360.36	ND U	23.21	46
PCB16/32	361.80	0.15 J	22.44	44
PCB17	361.80	0.09 J	22.33	44
PCB18	398.00	0.12 J	24.93	44
PCB19	361.80	ND U	20.83	41
PCB21	361.80	ND U	21.30	42
PCB22	361.80	ND U	24.54	48
PCB24/27	361.80	0.04 J	21.99	43
PCB25	360.36	ND U	23.64	46
PCB26	361.80	ND U	23.26	46
PCB28	399.60	0.22 J	26.50	47
PCB29	361.80	ND U	23.18	45
PCB31	399.60	0.14 J	25.18	44
PCB33/20	399.60	ND U	27.53	49
PCB41/64/71	398.00	ND U	27.10	48
PCB42	399.60	0.07 J	28.17	50
PCB43	360.36	ND U	22.64	45
PCB44	399.60	0.13 J	26.48	47
PCB45	360.36	ND U	22.30	44
PCB46	361.80	ND U	22.70	44
PCB47/75	360.36	0.08 J	23.72	46
PCB48	361.80	0.07 J	24.56	48
PCB49	398.00	0.23 J	25.76	45
PCB51	361.80	ND U	22.45	44
PCB52	399.60	0.31 J	26.26	46
PCB53	361.80	0.06 J	22.55	44
PCB56/60	399.60	0.09 J	30.03	53
PCB59	360.36	0.03 J	24.73	49
PCB63	360.36	ND U	25.49	50
PCB66	399.60	0.20 J	29.40	52
PCB70/76	399.60	0.15 J	29.90	53
PCB74	399.60	0.10 J	31.76	56
PCB82	361.80	ND U	25.40	50
PCB83	360.36	ND U	25.38	50
PCB84	399.60	0.08 J	28.16	50
PCB85	398.00	ND U	29.11	52
PCB87/115	398.00	ND U	28.28	50
PCB89	360.36	0.09 J	22.45	44
PCB91	360.36	0.04 J	24.31	48
PCB92	399.60	0.06 J	28.29	50
PCB95	399.60	0.20 J	27.04	48
PCB97	399.60	ND U	28.83	51
PCB99	400.00	ND U	29.07	51
PCB100	361.80	ND U	24.16	47
PCB101/90	398.80	0.07 J	31.67	56
PCB105	398.00	ND U	31.80	57
PCB107	361.80	ND U	27.90	55
PCB110	399.60	0.34 J	28.92	51
PCB114	360.36	ND U	27.16	53
PCB118	400.00	0.11 J	31.02	55
PCB119	361.80	ND U	25.79	51
PCB124	361.80	ND U	27.45	54
PCB128	398.00	ND U	31.75	57
PCB129	361.80	ND U	25.50	50
PCB130	360.36	ND U	26.02	51
PCB131	361.80	ND U	24.53	48
PCB132	399.60	0.10 J	28.00	49

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Sediment
Matrix Spike Sample Analysis

Client Reporting Sample ID:		C-0A	C-0A	
Battelle Sample ID:		W2704	YW70MS	
Extraction Batch ID:		01-201	01-201	
Batch Matrix:		Sediment	Sediment	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		21.36	21.36	
Sample Dry Weight (g):	FI40 & FI41	12.86	7.09	(%)
Reporting Units:	(ng)	ng/g,dry weight	ng/g,dry weight	Recovery
PCB				
PCB134	361.80	ND U	24.87	49
PCB135/144	399.60	ND U	27.45	49
PCB136	398.00	0.07 J	26.89	48
PCB137	399.60	ND U	30.04	53
PCB138/160/163	399.60	0.24 J	29.78	52
PCB141	399.60	ND U	29.18	52
PCB146	398.00	ND U	29.55	53
PCB149	398.00	0.18 J	28.80	51
PCB151	399.60	ND U	27.40	49
PCB153	398.00	0.14 J	28.17	50
PCB156	399.60	ND U	33.05	59
PCB158	398.00	ND U	30.26	54
PCB167	400.00	ND U	31.90	57
PCB169	361.80	ND U	31.24	61
PCB170/190	399.60	ND U	31.28	55
PCB171	361.80	ND U	26.08	51
PCB172	360.72	ND U	27.08	53
PCB173	361.80	ND U	25.78	50
PCB174	398.00	ND U	29.29	52
PCB175	361.80	ND U	24.13	47
PCB176	360.36	ND U	24.63	48
PCB177	398.00	ND U	30.49	54
PCB178	361.80	ND U	25.05	49
PCB180	398.00	ND U	31.15	55
PCB183	398.00	ND U	28.42	51
PCB184	399.60	0.06 J	27.70	49
PCB185	360.36	ND U	25.87	51
PCB187/182	399.60	ND U	28.02	50
PCB189	361.80	ND U	29.91	59
PCB191	361.80	ND U	26.60	52
PCB193	360.36	ND U	25.09	49
PCB194	398.00	ND U	30.10	54
PCB195	299.80	ND U	21.70	51
PCB197	360.36	ND U	25.76	51
PCB198	361.44	ND U	25.68	50
PCB199	362.16	ND U	24.11	47
PCB200	361.80	ND U	25.19	49
PCB201	360.36	ND U	24.98	49
PCB203/196	398.00	ND U	27.98	50
PCB205	271.36	ND U	21.01	55
PCB206	299.20	ND U	20.83	49
PCB207	270.82	ND U	18.63	49
PCB209	299.80	ND U	20.21	48
Biphenyl	NA	0.40 J	0.54 J	NA
Surrogate Recovery (%)				
PCB104		74	46	
PCB14		72	44	
PCB34		67	42	
PCB112		76	50	

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific MDL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Empores
MS - Matrix Spike

Client Reporting Sample ID:		T-L EMPORE	T-L MS EMPORE	
Battelle Sample ID:		W4318	W4320	
Extraction Batch ID:		01-309	01-309	
Batch Matrix:		Water	Water	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		NA	NA	
Sample Volume (L):	FI41	1.00	1.00	(%)
Reporting Units:	ng	total ng	total ng	Recovery
PCB				
Biphenyl	NA	17.05 B	12.64 B	54
PCB1	180.54	1.09 J	98.71	48
PCB3	180.18	0.65 J	87.18	NA
PCB4/10	180.18	257.16	417.54	41
PCB6	180.90	0.66 J	75.07	41
PCB7/9	180.90	0.46 J	74.63	NA
PCB8/5	NA	6.96	93.06	38 &
PCB12/13	180.18	ND U	68.65	37 &
PCB16/32	180.90	7.36	74.99	37 &
PCB17	180.90	22.38	89.20	NA
PCB18	NA	19.58	102.71	NA
PCB19	180.90	98.47	204.53	29 &
PCB21	180.90	ND U	51.85	26 &
PCB22	180.90	2.15 J	49.64	40
PCB24/27	180.90	23.36	95.73	25 &
PCB25	180.18	1.96 J	47.81	28 &
PCB26	180.90	5.84	56.01	NA
PCB28	NA	17.14	72.58	27 &
PCB29	180.90	ND U	47.98	NA
PCB31	NA	17.70	69.57	NA
PCB33/20	NA	6.54	60.82	0 &
PCB40	181.08	2.19 J	1.73 J	NA
PCB41/64/71	NA	15.85	56.73	NA
PCB42	NA	4.58 J	46.04	19 &
PCB43	180.18	ND U	33.58	NA
PCB44	NA	16.82	56.72	25 &
PCB45	180.18	3.65 J	49.02	25 &
PCB46	180.90	1.48 J	46.96	16 &
PCB47/75	180.18	12.53	41.14	20 &
PCB48	180.90	2.60 J	38.88	NA
PCB49	NA	23.90	65.82	22 &
PCB51	180.90	6.42	47.10	NA
PCB52	NA	40.03	75.52	27 &
PCB53	180.90	16.59	65.93	NA
PCB56/60	NA	6.54	34.39	19 &
PCB59	180.18	1.72 J	35.93	13 &
PCB63	180.18	0.80 J	24.17	NA
PCB66	NA	11.65	34.81	NA
PCB70/76	NA	17.32	38.71	NA
PCB74	NA	8.91	34.93	8 &
PCB82	180.90	1.27 J	16.22	9 &
PCB83	180.18	1.98 J	18.15	NA
PCB84	NA	5.78	29.10	NA
PCB85	NA	2.26 J	18.48	NA
PCB87/115	NA	7.40	23.75	8 &
PCB89	180.18	10.15	23.83	10 &
PCB91	180.18	3.70 J	20.91	NA
PCB92	NA	4.24 J	23.52	NA
PCB95	NA	20.13	39.77	NA
PCB97	NA	5.34	22.79	NA
PCB99	NA	8.54	23.10	9 &
PCB100	180.90	0.57 J	17.35	NA
PCB101/90	NA	11.92	25.03	NA
PCB105	NA	2.11 J	14.97	6 &
PCB107	180.90	0.76 J	12.01	NA
PCB110	NA	16.93	30.97	6 &
PCB114	180.18	0.73 J	11.65	NA
PCB118	NA	6.93	18.44	9 &
PCB119	180.90	0.78 J	16.60	6 &
PCB124	180.90	0.31 J	11.60	NA
PCB128	NA	0.44 J	9.67	5 &
PCB129	180.90	ND U	9.05	5 &
PCB130	180.18	ND U	8.59	5 &
PCB131	180.90	ND U	9.75	NA

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Empores
MS - Matrix Spike

Client Reporting Sample ID:		T-L EMPORE	T-L MS EMPORE	
Battelle Sample ID:		W4318	W4320	
Extraction Batch ID:		01-309	01-309	
Batch Matrix:		Water	Water	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		NA	NA	
Sample Volume (L):	FI41	1.00	1.00	(%)
Reporting Units:	ng	total ng	total ng	Recovery
PCB132	NA	2.23 J	12.68	6 &
PCB134	180.90	0.71 J	10.78	NA
PCB135/144	NA	1.75 J	14.06	NA
PCB136	NA	2.00 J	15.64	NA
PCB137	NA	0.66 J	9.77	NA
PCB138/160/163	NA	4.74 J	13.78	NA
PCB141	NA	1.13 J	12.08	NA
PCB146	NA	0.82 J	11.95	NA
PCB149	NA	5.82	15.46	NA
PCB151	NA	2.05 J	14.82	NA
PCB153	NA	4.19 J	12.48	NA
PCB156	NA	ND U	8.48	NA
PCB158	NA	0.55 J	10.62	NA
PCB167	NA	ND U	8.46	4 &
PCB169	180.90	ND U	7.90	NA
PCB170/190	NA	ND U	8.04	4 &
PCB171	180.90	ND U	6.54	4 &
PCB172	180.36	ND U	6.42	4 &
PCB173	180.90	ND U	6.87	NA
PCB174	NA	ND U	8.23	4 &
PCB175	180.90	ND U	6.45	4 &
PCB176	180.18	ND U	7.58	NA
PCB177	NA	ND U	8.24	4 &
PCB178	180.90	ND U	6.95	NA
PCB180	NA	0.56 J	8.09	NA
PCB183	NA	0.58 J	8.73	NA
PCB184	NA	ND U	8.44	4 &
PCB185	180.18	ND U	7.64	NA
PCB187/182	NA	0.85 J	9.05	3 &
PCB189	180.90	ND U	5.53	4 &
PCB191	180.90	ND U	7.27	3 &
PCB193	180.18	ND U	6.04	NA
PCB194	NA	ND U	6.45	NA
PCB195	NA	ND U	5.78	4 &
PCB197	180.18	ND U	7.34	4 &
PCB198	180.72	ND U	7.39	4 &
PCB199	181.08	ND U	6.87	4 &
PCB200	180.90	ND U	6.85	3 &
PCB201	180.18	ND U	6.09	NA
PCB203/196	NA	ND U	7.98	4 &
PCB205	135.68	ND U	5.32	NA
PCB206	NA	ND U	6.14	3 &
PCB207	135.41	ND U	4.55	NA
PCB209	NA	ND U	5.43	NA

Surrogate Recovery (%)			
PCB104		75	77
PCB14		74	79
PCB34		68	70
PCB112		76	77

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
B= Analyte detected at level >3X RL in PB.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest c 10025.29 0.00 840.97 0.00 3615.60
D = Diluted sample concentration reported for this anayte.

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Filters
MS - Matrix Spike

Client Reporting Sample ID:		GLASS FIBER T-L	T-L MS GLASS FIBER	
Battelle Sample ID:		W4317	W4319	
Extraction Batch ID:		01-308	01-308	
Batch Matrix:		Water	Water	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		NA	NA	
Sample Volume (L):	FI41	1.00	1.00	(%)
Reporting Units:	ng	total ng	total ng	Recovery
PCB				
Biphenyl	NA	7.11 J	5.56 J	NA
PCB1	180.54	ND U	ND U	0 &
PCB3	180.18	ND U	ND U	0 &
PCB4/10	180.18	6.22	2.24 J	-2 &
PCB6	180.90	0.44 J	0.30 J	0 &
PCB7/9	180.90	ND U	0.38 J	0 &
PCB8/5	NA	1.38 J	0.39 J	NA
PCB12/13	180.18	ND U	0.55 J	0 &
PCB16/32	180.90	1.23 J	2.40 J	1 &
PCB17	180.90	2.03 J	3.07 J	1 &
PCB18	NA	2.30 J	2.63 J	NA
PCB19	180.90	5.17	3.66 J	-1 &
PCB21	180.90	ND U	ND U	0 &
PCB22	180.90	0.58 J	2.76 J	1 &
PCB24/27	180.90	1.71 J	2.66 J	1 &
PCB25	180.18	ND U	2.27 J	1 &
PCB26	180.90	0.52 J	2.43 J	1 &
PCB28	NA	1.75 J	3.99 J	NA
PCB29	180.90	ND U	2.07 J	1 &
PCB31	NA	1.74 J	3.32 J	NA
PCB40	181.08	ND U	ND U	ND
PCB41/64/71	NA	2.79 J	5.88	NA
PCB42	NA	0.98 J	6.75	NA
PCB43	180.18	ND U	4.01 J	2 &
PCB44	NA	2.57 J	5.47	NA
PCB45	180.18	ND U	3.26 J	2 &
PCB46	180.90	0.32 J	3.69 J	2 &
PCB47/75	180.18	2.62 J	4.81	1 &
PCB48	180.90	1.10 J	3.26 J	1 &
PCB49	NA	3.71 J	6.45	NA
PCB51	180.90	1.57 J	4.35 J	2 &
PCB52	NA	6.53	6.64	NA
PCB53	180.90	2.79 J	4.76	1 &
PCB56/60	NA	1.15 J	5.11	NA
PCB59	180.18	0.52 J	3.65 J	2 &
PCB63	180.18	ND U	3.63 J	2 &
PCB66	NA	2.40 J	6.26	NA
PCB70/76	NA	2.31 J	5.30	NA
PCB74	NA	1.70 J	5.37	NA
PCB82	180.90	ND U	5.17	3 &
PCB83	180.18	ND U	5.94	3 &
PCB84	NA	1.32 J	6.64	NA
PCB85	NA	0.89 J	5.97	NA
PCB87/115	NA	2.46 J	4.94 J	NA
PCB89	180.18	1.62 J	4.70	2 &
PCB91	180.18	1.48 J	5.58	2 &
PCB92	NA	1.26 J	5.85	NA
PCB95	NA	4.64 J	7.55	NA
PCB97	NA	0.75 J	5.74	NA
PCB99	NA	2.02 J	5.36	NA
PCB100	180.90	ND U	5.00	3 &
PCB101/90	NA	1.70 J	5.89	NA
PCB105	NA	0.88 J	5.47	NA
PCB107	180.90	ND U	4.21 J	2 &
PCB110	NA	4.48 J	8.05	NA
PCB114	180.18	ND U	3.88 J	2 &
PCB118	NA	1.69 J	5.87	NA
PCB119	180.90	ND U	3.77 J	2 &
PCB124	180.90	ND U	3.78 J	2 &
PCB128	NA	ND U	5.48	NA
PCB129	180.90	ND U	4.21 J	2 &
PCB130	180.18	ND U	4.35 J	2 &
PCB131	180.90	ND U	4.66	3 &

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Project Name: Lake Hartwell
Project Number: G482801-UC21

PCB DATA - Filters
MS - Matrix Spike

Client Reporting Sample ID:		GLASS FIBER T-L	T-L MS GLASS FIBER	
Battelle Sample ID:		W4317	W4319	
Extraction Batch ID:		01-308	01-308	
Batch Matrix:		Water	Water	
Sample Dilution Factor:		1.667	1.667	
Sample Moisture Content (%):		NA	NA	
Sample Volume (L):	FI41	1.00	1.00	(%)
Reporting Units:	ng	total ng	total ng	Recovery
PCB132	NA	0.81 J	5.56	NA
PCB134	180.90	ND U	4.38 J	2 &
PCB135/144	NA	0.66 J	6.33	NA
PCB136	NA	0.78 J	6.52	NA
PCB137	NA	ND U	4.72 J	NA
PCB138/160/163	NA	2.64 J	7.61	NA
PCB141	NA	ND U	5.23	NA
PCB146	NA	ND U	5.18	NA
PCB149	NA	2.14 J	6.16	NA
PCB151	NA	0.95 J	5.69	NA
PCB153	NA	2.14 J	5.86	NA
PCB156	NA	ND U	4.30 J	NA
PCB158	NA	ND U	5.30	NA
PCB167	NA	ND U	4.51 J	NA
PCB169	180.90	ND U	3.94 J	2 &
PCB170/190	NA	ND U	5.48	NA
PCB171	180.90	ND U	3.71 J	2 &
PCB172	180.36	ND U	4.05 J	2 &
PCB173	180.90	ND U	4.03 J	2 &
PCB174	NA	ND U	4.79 J	NA
PCB175	180.90	ND U	4.28 J	2 &
PCB176	180.18	ND U	3.99 J	2 &
PCB177	NA	ND U	5.02	NA
PCB178	180.90	ND U	3.75 J	2 &
PCB180	NA	ND U	4.94 J	NA
PCB183	NA	ND U	4.92 J	NA
PCB184	NA	ND U	5.37	NA
PCB185	180.18	ND U	3.88 J	2 &
PCB187/182	NA	ND U	5.68	NA
PCB189	180.90	ND U	3.71 J	2 &
PCB191	180.90	ND U	3.69 J	2 &
PCB193	180.18	ND U	3.92 J	2 &
PCB194	NA	ND U	5.28	NA
PCB195	NA	ND U	3.86	NA
PCB197	180.18	ND U	3.53 J	2 &
PCB198	180.72	ND U	3.69 J	2 &
PCB199	181.08	ND U	4.16 J	2 &
PCB200	180.90	ND U	3.42 J	2 &
PCB201	180.18	ND U	3.52 J	2 &
PCB203/196	NA	ND U	4.60 J	NA
PCB205	135.68	ND U	2.85 J	2 &
PCB206	NA	ND U	2.19 J	NA
PCB207	135.41	ND U	3.09 J	2 &
PCB209	NA	ND U	2.68 J	NA

Surrogate Recovery (%)		
PCB104	74	71
PCB14	70	64
PCB34	59	55
PCB112	59	58

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest c   10025.29   0.00   101.27 0.00   458.99   0.00
D = Diluted sample concentration reported for this anayte.

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Field Sample Duplicate Data

Client Reporting Sample ID:	T-O-C-20	T-O-C-20	% RPD	T-O-B-15	T-O-B-15	% RPD
Battelle Sample ID:	W2683	W2683DUP		W2661	W2661DUP	
Extraction Batch ID:	01-202	01-202		01-208	01-208	
Batch Matrix:	Sediment	Sediment		Sediment	Sediment	
Sample Dilution Factor:	1.667	1.667		1.667	1.667	
Sample Moisture Content (%):	39.85	39.85		12.94	12.94	
Sample Dry Weight (g):	13.67	10.35		13.13	14.28	
Reporting Units:	ng/g,dry weight	ng/g,dry weight		ng/g,dry weight	ng/g,dry weight	
PCB						
PCB1	94.40	94.42	0.0	3.66	4.90	28.9
PCB3	39.70	35.51	11.1	1.74	2.23	NA
PCB4/10	522.57 D	550.72 D	5.2	ND U	ND U	NA
PCB6	24.14	21.01	13.9	1.22	1.44	NA
PCB7/9	6.26	5.51	12.8	0.50 J	0.64	NA
PCB8/5	158.98 Y	145.15	9.1	7.71	9.69	22.7
PCB12/13	3.08	2.03	NA	0.24 J	0.24 J	NA
PCB16/32	245.98 Y	232.11 Y	5.8	10.58	12.84	19.3
PCB17	131.58 Y	113.83	14.5	7.29	8.60	16.5
PCB18	67.78	58.68	14.4	4.74	5.68	18.0
PCB19	182.35 Y	181.55 Y	0.4	7.62	9.76	24.6
PCB21	ND U	ND U	NA	ND U	ND U	NA
PCB22	3.45	2.52	NA	ND U	0.27 J	NA
PCB24/27	79.25	76.62	3.4	3.39	3.96	NA
PCB25	31.41	27.44	13.5	0.99	1.19	NA
PCB26	57.69	49.47	15.3	1.93	2.22	NA
PCB28	20.97	16.10	26.3	1.09	1.36	NA
PCB29	0.39 J	0.37 J	NA	ND U	ND U	NA
PCB31	62.20	50.34	21.1	2.57	2.93	NA
PCB33/20	2.88	2.42	NA	ND U	0.22 J	NA
PCB40	3.11	2.89	NA	ND U	ND U	NA
PCB41/64/71	46.57	40.06	15.0	2.01	2.57	NA
PCB42	10.83	8.65	22.4	ND U	0.47 J	NA
PCB43	ND U	ND U	NA	ND U	ND U	NA
PCB44	21.01	17.78	16.7	0.46 J	0.69 J	NA
PCB45	5.80	5.12	12.4	0.37 J	0.50 J	NA
PCB46	1.88	1.73	NA	ND U	ND U	NA
PCB47/75	109.58	94.66	14.6	5.47	6.74	20.9
PCB48	ND U	ND U	NA	ND U	ND U	NA
PCB49	126.25 Y	113.58	10.6	5.80	7.31	22.9
PCB51	72.82	67.87	7.0	4.94	5.65	13.3
PCB52	141.15 Y	127.90	9.9	6.64	8.17	20.6
PCB53	110.04	102.18	7.4	6.04	6.98	14.4
PCB56/60	4.77	3.42	NA	0.29 J	0.51 J	NA
PCB59	3.12	2.90	NA	ND U	0.32 J	NA
PCB63	1.44	1.25	NA	ND U	ND U	NA
PCB66	12.36	11.07	11.1	0.79	1.07	NA
PCB70/76	10.18	7.93	24.9	0.76	0.91	NA
PCB74	15.09	11.27	29.0	0.61 J	0.77	NA
PCB82	2.36	1.79	NA	ND U	ND U	NA
PCB83	2.30	2.01	NA	ND U	ND U	NA
PCB84	13.25	11.09	17.8	0.58 J	0.80	NA
PCB85	4.57	3.59	NA	ND U	0.37 J	NA
PCB87/115	7.50	5.59	29.2	ND U	0.58 J	NA
PCB89	11.79	7.18	48.6 &	0.79	0.65	NA
PCB91	21.57	18.94	13.0	1.12	1.41	NA
PCB92	9.55	8.39	13.0	ND U	0.68 J	NA
PCB95	67.12	62.02	7.9	4.16	5.39	25.7
PCB97	5.21	4.03	NA	ND U	ND U	NA
PCB99	18.88	14.26	27.9	0.65 J	0.82	NA
PCB100	5.36	5.20	3.1	0.63 J	0.72	NA
PCB101/90	16.91	14.09	18.2	1.11	0.75	NA
PCB105	6.46	5.06	24.2	0.24 J	0.53 J	NA
PCB107	2.66	2.17	20.4	ND U	ND U	NA
PCB110	82.60	70.08	16.4	3.23	4.77	NA
PCB114	0.51 J	0.36 J	NA	ND U	ND U	NA
PCB118	26.33	20.39	25.4	0.93	1.45	NA
PCB119	4.60	4.02	NA	ND U	ND U	NA
PCB124	0.36 J	0.26 J	NA	ND U	ND U	NA
PCB128	5.96	4.63	NA	ND U	0.30 J	NA
PCB129	0.76	0.78 J	NA	ND U	ND U	NA
PCB130	2.61	2.17	NA	ND U	0.19 J	NA
PCB131	0.33 J	1.81	NA	ND U	ND U	NA
PCB132	12.40	9.97	21.7	0.32 J	0.76	NA
PCB134	2.24	1.93	NA	ND U	ND U	NA

Field Sample Duplicate Data

Client Reporting Sample ID:	T-O-C-20	T-O-C-20	% RPD	T-O-B-15	T-O-B-15	% RPD
PCB135/144	8.02	7.33	9.0	0.43 J	0.60 J	NA
PCB136	7.38	6.68	9.9	0.67 J	0.65 J	NA
PCB137	1.29	0.99	NA	ND U	ND U	NA
PCB138/160/163	44.21	37.28	17.0	1.67	2.93	NA
PCB141	2.17	1.56	NA	ND U	0.21 J	NA
PCB146	7.06	6.19	13.1	0.48 J	0.48 J	NA
PCB149	37.58	31.75	16.8	1.54	2.21	NA
PCB151	8.71	7.88	9.9	0.46 J	0.70	NA
PCB153	32.99	27.77	17.2	1.23	1.86	NA
PCB156	2.81	2.45	NA	ND U	0.17 J	NA
PCB158	2.70	2.11	NA	ND U	0.28 J	NA
PCB167	1.21	0.95 J	NA	ND U	ND U	NA
PCB169	ND U	ND U	NA	ND U	ND U	NA
PCB170/190	5.61	4.79	15.8	ND U	ND U	NA
PCB171	1.63	1.58	NA	ND U	ND U	NA
PCB172	0.33 J	0.29 J	NA	ND U	ND U	NA
PCB173	0.13 J	0.18 J	NA	ND U	ND U	NA
PCB174	3.31	2.92	NA	ND U	0.20 J	NA
PCB175	0.21 J	0.19 J	NA	ND U	ND U	NA
PCB176	0.70	0.73 J	NA	ND U	ND U	NA
PCB177	4.58	3.89	NA	ND U	0.32 J	NA
PCB178	2.12	2.11	NA	ND U	0.39 J	NA
PCB180	6.81	5.89	14.5	0.21 J	0.37 J	NA
PCB183	1.99	1.86	NA	ND U	ND U	NA
PCB184	0.09 J	0.10 J	NA	ND U	ND U	NA
PCB185	0.24 J	0.26 J	NA	ND U	ND U	NA
PCB187/182	7.45	6.86	8.3	0.61 J	0.53 J	NA
PCB189	0.31 J	0.29 J	NA	ND U	ND U	NA
PCB191	0.20 J	0.14 J	NA	ND U	ND U	NA
PCB193	0.50 J	0.53 J	NA	ND U	ND U	NA
PCB194	1.08	1.00	NA	ND U	ND U	NA
PCB195	0.55	0.54 J	NA	ND U	ND U	NA
PCB197	0.14 J	0.21 J	NA	ND U	ND U	NA
PCB198	0.11 J	0.15 J	NA	ND U	ND U	NA
PCB199	1.58	1.66	NA	ND U	ND U	NA
PCB200	0.17 J	0.43 J	NA	ND U	ND U	NA
PCB201	0.33 J	0.34 J	NA	ND U	ND U	NA
PCB203/196	1.26	1.14	NA	ND U	ND U	NA
PCB205	0.05 J	0.15 J	NA	ND U	ND U	NA
PCB206	0.69	0.77	NA	ND U	ND U	NA
PCB207	0.13 J	0.13 J	NA	ND U	ND U	NA
PCB209	0.19 J	0.24 J	NA	ND U	ND U	NA
Biphenyl	0.57 J	0.55 J	NA	0.25 J	0.28 J	NA
Surrogate Recovery (%)						
PCB104	63	63		71	69	
PCB14	53	55		65	61	
PCB34	60	60		65	61	
PCB112	61	62		73	75	

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precision criteria goal.
NA = Not Applicable.
J = Detected, but below the sample specific RL.
Y = Peak area higher than the highest calibration standard.
D = Diluted sample concentration reported for this anayte.

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Field Sample Duplicate Data

Client Reporting Sample ID:	T-O-A-20	T-O-A-20	% RPD	T-L-B-20	T-L-B-20	% RPD
Battelle Sample ID:	W2628	W2628DUP		W2737	W2737DUP	
Extraction Batch ID:	01-204	01-204		01-207	01-207	
Batch Matrix:	Sediment	Sediment		Sediment	Sediment	
Sample Dilution Factor:	1.667	1.667		1.667	1.667	
Sample Moisture Content (%):	23.92	23.92		44.40	44.40	
Sample Dry Weight (g):	12.27	12.78		9.08	9.95	
Reporting Units:	ng/g,dry weight	ng/g,dry weight		ng/g,dry weight	ng/g,dry weight	
PCB						
PCB1	1.80	1.63	NA	18.39	20.36	10.2
PCB3	1.00	0.85	NA	19.69	16.26	19.1
PCB4/10	15.03	12.85	15.6	143.39	136.92	4.6
PCB6	0.88	0.68 J	NA	37.50	34.28	9.0
PCB7/9	0.25 J	0.22 J	NA	11.23	10.58	6.0
PCB8/5	8.08	6.77	17.6	117.01	116.42	0.5
PCB12/13	0.26 J	0.24 J	NA	2.11	1.79	NA
PCB16/32	17.98	15.12	17.3	202.31	227.76	11.8
PCB17	8.21	7.16	13.7	137.51	146.87	6.6
PCB18	4.90	4.09	18.1	119.64	121.46	1.5
PCB19	13.62	11.64	15.7	108.27	112.00	3.4
PCB21	ND U	ND U	NA	ND U	ND U	NA
PCB22	1.70	1.42	NA	5.48	5.53	1.0
PCB24/27	7.05	6.05	15.2	59.22	61.64	4.0
PCB25	1.12	1.12	NA	70.63	75.51	6.7
PCB26	3.23	2.93	NA	109.19	118.61	8.3
PCB28	8.48	7.81	8.3	21.82	20.88	4.4
PCB29	0.08 J	0.06 J	NA	ND U	0.30 J	NA
PCB31	7.23	6.35	13.0	88.69	93.60	5.4
PCB33/20	1.99	1.70	NA	3.69	4.66	NA
PCB40	1.49	1.41	NA	11.43	0.65 J	NA
PCB41/64/71	12.22	11.41	6.9	91.16	108.32	17.2
PCB42	4.20	3.92	6.9	27.28	31.51	14.4
PCB43	ND U	ND U	NA	ND U	ND U	NA
PCB44	8.81	8.35	5.4	44.02	53.86	20.1
PCB45	1.97	1.70	NA	9.26	10.46	12.2
PCB46	0.70 J	0.70 J	NA	3.43	3.86	NA
PCB47/75	14.87	13.53	9.4	148.46	178.96	18.6
PCB48	1.45	1.63	NA	ND U	ND U	NA
PCB49	17.58	16.10	8.8	252.94	323.31 Y	24.4
PCB51	7.43	6.56	12.4	73.28	82.04	11.3
PCB52	19.46	18.33	6.0	267.69	324.10 Y	19.1
PCB53	11.11	10.01	10.5	117.13	133.44	13.0
PCB56/60	8.74	8.39	4.1	4.74	4.29	NA
PCB59	1.09	1.17	NA	5.54	7.26	26.9
PCB63	1.03	1.05	NA	1.29	1.34	NA
PCB66	15.63	14.96	4.3	17.36	13.74	23.3
PCB70/76	11.46	11.01	4.0	9.87	9.80	0.7
PCB74	10.27	10.08	1.9	17.67	19.95	12.1
PCB82	1.95	2.00	NA	2.37	2.89	NA
PCB83	1.10	1.14	NA	3.21	3.70	NA
PCB84	4.01	4.05	NA	24.83	31.20	22.7
PCB85	3.25	3.20	NA	5.08	6.64	NA
PCB87/115	6.11	5.51	10.3	5.64	6.20	9.4
PCB89	7.99	7.35	8.3	ND U	ND U	NA
PCB91	4.93	4.81	2.4	42.56	51.09	18.2
PCB92	4.17	4.20	0.8	10.74	13.87	25.4
PCB95	14.48	14.47	0.1	103.67	129.73	22.3
PCB97	4.51	4.49	0.5	8.06	8.88	9.7
PCB99	9.51	9.49	0.2	31.93	37.16	15.1
PCB100	0.90	0.85	NA	7.08	9.01	24.0
PCB101/90	7.90	10.13	24.7	37.60	50.67	29.6
PCB105	5.52	5.62	1.8	5.03	6.30	NA
PCB107	1.59	1.58	NA	2.74	3.60	NA
PCB110	24.21	25.00	3.2	154.81	208.32	29.5
PCB114	0.49 J	0.43 J	NA	ND U	0.47 J	NA
PCB118	15.78	16.07	1.8	37.82	47.58	22.8
PCB119	1.17	1.18	NA	8.08	10.65	27.5
PCB124	0.58 J	0.46 J	NA	ND U	0.41 J	NA
PCB128	2.88	2.90	NA	8.30	12.12	37.4 &
PCB129	0.58 J	0.68 J	NA	0.85 J	1.17	NA
PCB130	1.13	1.15	NA	3.55	5.51	NA
PCB131	0.22 J	0.26 J	NA	ND U	0.60 J	NA
PCB132	4.45	4.93	10.2	17.62	24.96	34.5
PCB134	0.95	1.05	NA	2.79	3.97	NA

Field Sample Duplicate Data

Client Reporting Sample ID:	T-O-A-20	T-O-A-20	% RPD	T-L-B-20	T-L-B-20	% RPD
PCB135/144	2.80	2.97	NA	13.10	17.17	26.9
PCB136	2.14	2.05	NA	13.26	17.07	25.1
PCB137	0.91	0.83	NA	1.44	2.09	NA
PCB138/160/163	18.43	18.57	0.8	56.98	82.17	36.2 &
PCB141	1.70	1.66	NA	2.33	3.30	NA
PCB146	2.89	2.81	NA	11.14	15.29	31.4
PCB149	10.67	10.90	2.1	78.41	100.37	24.6
PCB151	2.78	2.94	NA	11.64	16.21	32.8
PCB153	12.71	12.71	0.0	59.28	78.39	27.8
PCB156	1.48	1.69	NA	3.21	5.37	NA
PCB158	1.33	1.32	NA	2.82	4.42	NA
PCB167	0.67 J	0.61 J	NA	1.73	2.50	NA
PCB169	ND U	ND U	NA	ND U	ND U	NA
PCB170/190	2.32	2.22	NA	8.35	10.88	26.3
PCB171	0.58 J	0.64 J	NA	3.03	4.18	NA
PCB172	0.13 J	0.15 J	NA	0.48 J	0.78 J	NA
PCB173	ND U	ND U	NA	ND U	0.33 J	NA
PCB174	1.40	1.43	NA	5.23	8.52	NA
PCB175	0.13 J	0.12 J	NA	ND U	0.42 J	NA
PCB176	0.28 J	0.26 J	NA	1.27	1.87	NA
PCB177	1.32	1.41	NA	7.74	10.95	34.4
PCB178	0.51 J	0.61 J	NA	2.76	4.39	NA
PCB180	2.73	2.59	NA	10.55	16.86	46.0 &
PCB183	0.74 J	0.72 J	NA	3.29	5.23	NA
PCB184	ND U	0.07 J	NA	ND U	ND U	NA
PCB185	0.23 J	0.19 J	NA	ND U	0.37 J	NA
PCB187/182	1.91	2.08	NA	13.88	20.33	37.7 &
PCB189	0.21 J	0.22 J	NA	0.41 J	0.79 J	NA
PCB191	ND U	0.12 J	NA	0.29 J	0.67 J	NA
PCB193	0.16 J	0.23 J	NA	0.86 J	1.27	NA
PCB194	0.55 J	0.50 J	NA	1.97	3.20	NA
PCB195	0.27 J	0.33 J	NA	0.99	1.38	NA
PCB197	ND U	ND U	NA	0.21 J	0.46 J	NA
PCB198	ND U	ND U	NA	0.30 J	0.44 J	NA
PCB199	0.60 J	0.75	NA	3.05	4.12	NA
PCB200	ND U	0.14 J	NA	0.49 J	0.65 J	NA
PCB201	0.12 J	0.17 J	NA	0.65 J	0.85 J	NA
PCB203/196	0.64 J	0.52 J	NA	2.50	3.48	NA
PCB205	ND U	ND U	NA	ND U	0.36 J	NA
PCB206	0.42 J	0.29 J	NA	1.42	2.06	NA
PCB207	ND U	ND U	NA	0.21 J	0.37 J	NA
PCB209	0.17 J	0.18 J	NA	0.39 J	0.67 J	NA
Biphenyl	0.83 J	0.80 J	NA	0.48 J	0.24 J	NA
Surrogate Recovery (%)						
PCB104	57	57		70	89	
PCB14	42	37 &		50	53	
PCB34	49	46		58	64	
PCB112	64	71		68	95	

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precis
NA = Not Applicable.
J = Detected, but below the sample specific
Y = Peak area higher than the highest calibr
D = Diluted sample concentration reported fc

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Field Sample Duplicate Data

Client Reporting Sample ID:	T-L-A-20	T-L-A-20	% RPD	T-I-A-20	T-I-A-20	% RPD
Battelle Sample ID:	W2648	W2648DUP		W2796	W2796DUP	
Extraction Batch ID:	01-206	01-206		01-222	01-222	
Batch Matrix:	Sediment	Sediment		Sediment	Sediment	
Sample Dilution Factor:	1.667	1.667		1.667	1.667	
Sample Moisture Content (%):	20.11	20.11		34.44	34.44	
Sample Dry Weight (g):	12.73	11.55		10.73	11.20	
Reporting Units:	ng/g,dry weight	ng/g,dry weight		ng/g,dry weight	ng/g,dry weight	
PCB						
PCB1	0.03 J	0.16 J	NA	0.48 J	ND U	NA
PCB3	ND U	0.07 J	NA	ND U	ND U	NA
PCB4/10	0.11 J	0.42 J	NA	1.26	0.27 J	NA
PCB6	ND U	0.04 J	NA	ND U	ND U	NA
PCB7/9	ND U	0.02 J	NA	0.13 J	0.22 J	NA
PCB8/5	ND U	0.11 J	NA	0.23 J	ND U	NA
PCB12/13	ND U	ND U	NA	ND U	ND U	NA
PCB16/32	ND U	0.08 J	NA	0.29 J	0.24 J	NA
PCB17	ND U	0.06 J	NA	ND U	ND U	NA
PCB18	ND U	0.03 J	NA	ND U	ND U	NA
PCB19	ND U	0.12 J	NA	0.32 J	0.19 J	NA
PCB21	ND U	ND U	NA	ND U	ND U	NA
PCB22	ND U	ND U	NA	ND U	ND U	NA
PCB24/27	ND U	0.05 J	NA	ND U	ND U	NA
PCB25	ND U	ND U	NA	ND U	ND U	NA
PCB26	ND U	ND U	NA	ND U	ND U	NA
PCB28	ND U	0.04 J	NA	ND U	ND U	NA
PCB29	ND U	ND U	NA	ND U	ND U	NA
PCB31	ND U	0.04 J	NA	ND U	ND U	NA
PCB33/20	ND U	ND U	NA	ND U	ND U	NA
PCB40	ND U	0.36 J	NA	0.85	0.84	NA
PCB41/64/71	ND U	ND U	NA	ND U	ND U	NA
PCB42	ND U	ND U	NA	ND U	ND U	NA
PCB43	ND U	ND U	NA	ND U	ND U	NA
PCB44	ND U	ND U	NA	ND U	ND U	NA
PCB45	ND U	ND U	NA	ND U	ND U	NA
PCB46	ND U	ND U	NA	ND U	ND U	NA
PCB47/75	ND U	0.05 J	NA	ND U	0.06 J	NA
PCB48	ND U	ND U	NA	ND U	ND U	NA
PCB49	ND U	0.08 J	NA	ND U	0.12 J	NA
PCB51	ND U	ND U	NA	0.16 J	0.19 J	NA
PCB52	0.10 J	0.13 J	NA	0.21 J	0.15 J	NA
PCB53	ND U	ND U	NA	0.18 J	0.12 J	NA
PCB56/60	ND U	ND U	NA	ND U	ND U	NA
PCB59	ND U	ND U	NA	ND U	ND U	NA
PCB63	ND U	ND U	NA	ND U	ND U	NA
PCB66	ND U	0.04 J	NA	ND U	ND U	NA
PCB70/76	ND U	ND U	NA	ND U	ND U	NA
PCB74	ND U	ND U	NA	ND U	ND U	NA
PCB82	ND U	ND U	NA	ND U	ND U	NA
PCB83	ND U	ND U	NA	ND U	ND U	NA
PCB84	ND U	ND U	NA	ND U	ND U	NA
PCB85	ND U	ND U	NA	ND U	ND U	NA
PCB87/115	ND U	ND U	NA	ND U	ND U	NA
PCB89	ND U	ND U	NA	ND U	ND U	NA
PCB91	ND U	ND U	NA	ND U	ND U	NA
PCB92	ND U	ND U	NA	ND U	ND U	NA
PCB95	ND U	ND U	NA	ND U	ND U	NA
PCB97	ND U	ND U	NA	ND U	ND U	NA
PCB99	ND U	ND U	NA	ND U	ND U	NA
PCB100	ND U	ND U	NA	ND U	ND U	NA
PCB101/90	ND U	ND U	NA	ND U	ND U	NA
PCB105	ND U	ND U	NA	ND U	ND U	NA
PCB107	ND U	ND U	NA	ND U	ND U	NA
PCB110	ND U	ND U	NA	ND U	ND U	NA
PCB114	ND U	ND U	NA	ND U	ND U	NA
PCB118	ND U	ND U	NA	ND U	ND U	NA
PCB119	ND U	ND U	NA	ND U	ND U	NA
PCB124	ND U	ND U	NA	ND U	ND U	NA
PCB128	ND U	ND U	NA	ND U	ND U	NA
PCB129	ND U	ND U	NA	ND U	ND U	NA
PCB130	ND U	ND U	NA	ND U	ND U	NA
PCB131	ND U	ND U	NA	ND U	ND U	NA
PCB132	ND U	ND U	NA	ND U	ND U	NA
PCB134	ND U	ND U	NA	ND U	ND U	NA

Field Sample Duplicate Data

Client Reporting Sample ID:	T-L-A-20	T-L-A-20	% RPD	T-I-A-20	T-I-A-20	% RPD
PCB135/144	ND U	ND U	NA	ND U	ND U	NA
PCB136	ND U	ND U	NA	ND U	ND U	NA
PCB137	ND U	ND U	NA	ND U	ND U	NA
PCB138/160/163	ND U	ND U	NA	ND U	ND U	NA
PCB141	ND U	ND U	NA	ND U	ND U	NA
PCB146	ND U	ND U	NA	ND U	ND U	NA
PCB149	ND U	ND U	NA	ND U	ND U	NA
PCB151	ND U	ND U	NA	ND U	ND U	NA
PCB153	ND U	ND U	NA	ND U	ND U	NA
PCB156	ND U	ND U	NA	ND U	ND U	NA
PCB158	ND U	ND U	NA	ND U	ND U	NA
PCB167	ND U	ND U	NA	ND U	ND U	NA
PCB169	ND U	ND U	NA	ND U	ND U	NA
PCB170/190	ND U	ND U	NA	ND U	ND U	NA
PCB171	ND U	ND U	NA	ND U	ND U	NA
PCB172	ND U	ND U	NA	ND U	ND U	NA
PCB173	ND U	ND U	NA	ND U	ND U	NA
PCB174	ND U	ND U	NA	ND U	ND U	NA
PCB175	ND U	ND U	NA	ND U	ND U	NA
PCB176	ND U	ND U	NA	ND U	ND U	NA
PCB177	ND U	ND U	NA	ND U	ND U	NA
PCB178	ND U	ND U	NA	ND U	ND U	NA
PCB180	ND U	ND U	NA	ND U	ND U	NA
PCB183	ND U	ND U	NA	ND U	ND U	NA
PCB184	ND U	ND U	NA	ND U	ND U	NA
PCB185	ND U	ND U	NA	ND U	ND U	NA
PCB187/182	ND U	ND U	NA	ND U	ND U	NA
PCB189	ND U	ND U	NA	ND U	ND U	NA
PCB191	ND U	ND U	NA	ND U	ND U	NA
PCB193	ND U	ND U	NA	ND U	ND U	NA
PCB194	ND U	ND U	NA	ND U	ND U	NA
PCB195	ND U	ND U	NA	ND U	ND U	NA
PCB197	ND U	ND U	NA	ND U	ND U	NA
PCB198	ND U	ND U	NA	ND U	ND U	NA
PCB199	ND U	ND U	NA	ND U	ND U	NA
PCB200	ND U	ND U	NA	ND U	ND U	NA
PCB201	ND U	ND U	NA	ND U	ND U	NA
PCB203/196	ND U	ND U	NA	ND U	ND U	NA
PCB205	ND U	ND U	NA	ND U	ND U	NA
PCB206	ND U	ND U	NA	ND U	ND U	NA
PCB207	ND U	ND U	NA	ND U	ND U	NA
PCB209	ND U	ND U	NA	ND U	ND U	NA
Biphenyl	1.38	1.28 J	NA	0.22 J	0.43 J	NA

Surrogate Recovery (%)						
PCB104	56	62		67	66	
PCB14	58	63		53	53	
PCB34	51	58		51	52	
PCB112	55	67		61	63	

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precis
NA = Not Applicable.
J = Detected, but below the sample specific
Y = Peak area higher than the highest calibr
D = Diluted sample concentration reported fc

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Field Sample Duplicate Data

Client Reporting Sample ID:	GLASS FIBER T-L	T-L DUP GLASS FIBER	% RPD	T-L EMPORE	T-L DUP EMPORE	% RPD
Battelle Sample ID:	W4317	W4311		W4318	W4312	
Extraction Batch ID:	01-308	01-308		01-309	01-309	
Batch Matrix:	Water	Water		Water	Water	
Sample Dilution Factor:	1.667	1.667		1.667	1.667	
Sample Moisture Content (%):	NA	NA		NA	NA	
Sample Dry Weight (g):	1.00	1.00		1.00	1.00	
Reporting Units:	total ng	total ng		total ng	total ng	
PCB						
PCB1	7.11 J	5.52 J	NA	17.05 B	11.29 B	NA
PCB3	ND U	ND U	NA	1.09 J	0.42 J	NA
PCB4/10	ND U	ND U	NA	0.65 J	0.41 J	NA
PCB6	6.22	1.21 J	NA	257.16	281.48	9.0
PCB7/9	0.44 J	ND U	NA	0.66 J	0.42 J	NA
PCB8/5	ND U	ND U	NA	0.46 J	0.35 J	NA
PCB12/13	1.38 J	ND U	NA	6.96	6.07	NA
PCB16/32	ND U	ND U	NA	ND U	ND U	NA
PCB17	1.23 J	ND U	NA	7.36	6.85	NA
PCB18	2.03 J	0.94 J	NA	22.38	24.35	NA
PCB19	2.30 J	0.60 J	NA	19.58	19.71	NA
PCB21	5.17	1.59 J	NA	98.47	111.91	12.8
PCB22	ND U	ND U	NA	ND U	ND U	NA
PCB24/27	0.58 J	ND U	NA	2.15 J	4.58	NA
PCB25	1.71 J	0.59 J	NA	23.36	26.75	13.6
PCB26	ND U	ND U	NA	1.96 J	2.19 J	NA
PCB28	0.52 J	ND U	NA	5.84	5.99	NA
PCB29	1.75 J	0.83 J	NA	17.14	19.65	NA
PCB31	ND U	ND U	NA	ND U	ND U	NA
PCB33/20	1.74 J	0.77 J	NA	17.70	18.85	NA
PCB40	0.71 J	ND U	NA	6.54	6.17	NA
PCB41/64/71	ND U	ND U	NA	2.19 J	2.17 J	NA
PCB42	2.79 J	1.05 J	NA	15.85	18.37	NA
PCB43	0.98 J	ND U	NA	4.58 J	6.05	NA
PCB44	ND U	ND U	NA	ND U	ND U	NA
PCB45	2.57 J	1.08 J	NA	16.82	18.37	NA
PCB46	ND U	ND U	NA	3.65 J	4.09 J	NA
PCB47/75	0.32 J	ND U	NA	1.48 J	1.22 J	NA
PCB48	2.62 J	1.48 J	NA	12.53	17.44	NA
PCB49	1.10 J	ND U	NA	2.60 J	4.47 J	NA
PCB51	3.71 J	2.13 J	NA	23.90	27.53	NA
PCB52	1.57 J	1.15 J	NA	6.42	8.00	NA
PCB53	6.53	2.61 J	NA	40.03	45.23	12.2
PCB56/60	2.79 J	1.00 J	NA	16.59	20.71	NA
PCB59	1.15 J	ND U	NA	6.54	8.27	NA
PCB63	0.52 J	ND U	NA	1.72 J	1.93 J	NA
PCB66	ND U	ND U	NA	0.80 J	1.17 J	NA
PCB70/76	2.40 J	1.03 J	NA	11.65	14.90	NA
PCB74	2.31 J	1.12 J	NA	17.32	22.13	NA
PCB82	1.70 J	0.50 J	NA	8.91	11.68	NA
PCB83	ND U	ND U	NA	1.27 J	2.19 J	NA
PCB84	ND U	ND U	NA	1.98 J	2.06 J	NA
PCB85	1.32 J	ND U	NA	5.78	6.31	NA
PCB87/115	0.89 J	ND U	NA	2.26 J	3.03 J	NA
PCB89	2.46 J	ND U	NA	7.40	10.58	NA
PCB91	1.62 J	0.68 J	NA	10.15	14.09	NA
PCB92	1.48 J	0.80 J	NA	3.70 J	4.94	NA
PCB95	1.26 J	ND U	NA	4.24 J	5.34	NA
PCB97	4.64 J	1.12 J	NA	20.13	23.99	NA
PCB99	0.75 J	ND U	NA	5.34	6.97	NA
PCB100	2.02 J	0.63 J	NA	8.54	11.72	NA
PCB101/90	ND U	ND U	NA	0.57 J	0.79 J	NA
PCB105	1.70 J	0.65 J	NA	11.92	14.91	NA
PCB107	0.88 J	ND U	NA	2.11 J	3.23 J	NA
PCB110	ND U	ND U	NA	0.76 J	1.39 J	NA
PCB114	4.48 J	1.40 J	NA	16.93	22.76	NA
PCB118	ND U	ND U	NA	0.73 J	0.70 J	NA
PCB119	1.69 J	1.13 J	NA	6.93	10.69	NA
PCB124	ND U	ND U	NA	0.78 J	0.88 J	NA
PCB128	ND U	ND U	NA	0.31 J	0.63 J	NA
PCB129	ND U	ND U	NA	0.44 J	0.91 J	NA
PCB130	ND U	ND U	NA	ND U	0.47 J	NA
PCB131	ND U	ND U	NA	ND U	0.46 J	NA
PCB132	ND U	ND U	NA	ND U	ND U	NA
PCB134	0.81 J	0.97 J	NA	2.23 J	2.53 J	NA

Field Sample Duplicate Data

Client Reporting Sample ID:	GLASS FIBER T-L	T-L DUP GLASS FIBER	% RPD	T-L EMPORE	T-L DUP EMPORE	% RPD
PCB135/144	ND U	ND U	NA	0.71 J	0.94 J	NA
PCB136	0.66 J	ND U	NA	1.75 J	2.41 J	NA
PCB137	0.78 J	0.66 J	NA	2.00 J	2.36 J	NA
PCB138/160/163	ND U	ND U	NA	0.66 J	0.62 J	NA
PCB141	2.64 J	1.42 J	NA	4.74 J	6.96	NA
PCB146	ND U	ND U	NA	1.13 J	1.39 J	NA
PCB149	ND U	ND U	NA	0.82 J	1.37 J	NA
PCB151	2.14 J	0.94 J	NA	5.82	7.77	NA
PCB153	0.95 J	ND U	NA	2.05 J	3.08 J	NA
PCB156	2.14 J	1.24 J	NA	4.19 J	6.09	NA
PCB158	ND U	ND U	NA	ND U	0.31 J	NA
PCB167	ND U	ND U	NA	0.55 J	0.79 J	NA
PCB169	ND U	ND U	NA	ND U	0.15 J	NA
PCB170/190	ND U	ND U	NA	ND U	ND U	NA
PCB171	ND U	ND U	NA	ND U	ND U	NA
PCB172	ND U	ND U	NA	ND U	0.19 J	NA
PCB173	ND U	ND U	NA	ND U	ND U	NA
PCB174	ND U	ND U	NA	ND U	ND U	NA
PCB175	ND U	ND U	NA	ND U	0.85 J	NA
PCB176	ND U	ND U	NA	ND U	ND U	NA
PCB177	ND U	ND U	NA	ND U	ND U	NA
PCB178	ND U	ND U	NA	ND U	0.22 J	NA
PCB180	ND U	ND U	NA	ND U	ND U	NA
PCB183	ND U	ND U	NA	0.56 J	0.69 J	NA
PCB184	ND U	ND U	NA	0.58 J	0.50 J	NA
PCB185	ND U	ND U	NA	ND U	ND U	NA
PCB187/182	ND U	ND U	NA	ND U	ND U	NA
PCB189	ND U	ND U	NA	0.85 J	0.85 J	NA
PCB191	ND U	ND U	NA	ND U	ND U	NA
PCB193	ND U	ND U	NA	ND U	ND U	NA
PCB194	ND U	ND U	NA	ND U	ND U	NA
PCB195	ND U	ND U	NA	ND U	ND U	NA
PCB197	ND U	ND U	NA	ND U	ND U	NA
PCB198	ND U	ND U	NA	ND U	ND U	NA
PCB199	ND U	ND U	NA	ND U	ND U	NA
PCB200	ND U	ND U	NA	ND U	ND U	NA
PCB201	ND U	ND U	NA	ND U	ND U	NA
PCB203/196	ND U	ND U	NA	ND U	ND U	NA
PCB205	ND U	ND U	NA	ND U	ND U	NA
PCB206	ND U	ND U	NA	ND U	ND U	NA
PCB207	ND U	ND U	NA	ND U	ND U	NA
PCB209	ND U	ND U	NA	ND U	ND U	NA
Biphenyl	ND U	ND U	NA	ND U	ND U	NA
Surrogate Recovery (%)						
PCB104	74	64		75	83	
PCB14	70	61		74	79	
PCB34	59	50		68	73	
PCB112	59	33 &		76	87	

U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precis
NA = Not Applicable.
J = Detected, but below the sample specific
Y = Peak area higher than the highest calibr
D = Diluted sample concentration reported fc

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Project Name: Lake Hartwell
Project Number: G482801-UC21

Field Sample Duplicate Data

Client Reporting Sample ID:	C-6B	C-6B	% RPD	C6-D-2	C6-D-2	% RPD
Battelle Sample ID:	W2717	W2717DUP		W2746	W2746DUP	
Extraction Batch ID:	01-201	01-201		01-209	01-209	
Batch Matrix:	Sediment	Sediment		Sediment	Sediment	
Sample Dilution Factor:	1.667	1.667		1.667	1.667	
Sample Moisture Content (%):	21.47	21.47		22.38	22.38	
Sample Dry Weight (g):	15.15	15.25		12.77	11.69	
Reporting Units:	ng/g,dry weight	ng/g,dry weight		ng/g,dry weight	ng/g,dry weight	
PCB						
PCB1	1.07	0.41 J	NA	0.30 J	0.23 J	NA
PCB3	0.20 J	0.10 J	NA	ND U	0.08 J	NA
PCB4/10	ND U	ND U	NA	ND U	ND U	NA
PCB6	0.24 J	0.08 J	NA	ND U	ND U	NA
PCB7/9	ND U	ND U	NA	ND U	ND U	NA
PCB8/5	2.74	0.30 J	NA	0.36 J	ND U	NA
PCB12/13	0.16 J	ND U	NA	ND U	ND U	NA
PCB16/32	5.72	0.47 J	NA	0.69 J	0.44 J	NA
PCB17	3.04	0.24 J	NA	0.36 J	0.30 J	NA
PCB18	2.46	0.16 J	NA	0.38 J	0.26 J	NA
PCB19	3.98	0.52 J	NA	0.70 J	0.50 J	NA
PCB21	ND U	ND U	NA	ND U	ND U	NA
PCB22	1.63	ND U	NA	ND U	ND U	NA
PCB24/27	1.61	0.24 J	NA	0.20 J	0.18 J	NA
PCB25	0.46 J	ND U	NA	ND U	ND U	NA
PCB26	1.11	ND U	NA	ND U	ND U	NA
PCB28	7.40	0.31 J	NA	0.32 J	0.33 J	NA
PCB29	ND U	ND U	NA	ND U	ND U	NA
PCB31	2.34	0.22 J	NA	0.26 J	0.19 J	NA
PCB33/20	0.62 J	ND U	NA	0.18 J	ND U	NA
PCB40	0.64	0.27 J	NA	0.43 J	ND U	NA
PCB41/64/71	5.38	0.27 J	NA	0.32 J	0.24 J	NA
PCB42	1.97	0.09 J	NA	ND U	ND U	NA
PCB43	ND U	ND U	NA	ND U	ND U	NA
PCB44	3.98	0.21 J	NA	0.43 J	ND U	NA
PCB45	1.03	ND U	NA	ND U	ND U	NA
PCB46	0.44 J	ND U	NA	ND U	ND U	NA
PCB47/75	3.07	0.34 J	NA	0.43 J	0.23 J	NA
PCB48	0.92	ND U	NA	ND U	ND U	NA
PCB49	5.25	0.45 J	NA	0.54 J	0.30 J	NA
PCB51	1.25	0.21 J	NA	0.21 J	0.13 J	NA
PCB52	6.38	0.50 J	NA	0.66 J	0.54 J	NA
PCB53	2.24	0.27 J	NA	0.28 J	0.31 J	NA
PCB56/60	5.28	0.20 J	NA	0.21 J	0.25 J	NA
PCB59	0.60	0.04 J	NA	ND U	ND U	NA
PCB63	0.26 J	0.05 J	NA	ND U	ND U	NA
PCB66	6.97	0.36 J	NA	0.36 J	0.31 J	NA
PCB70/76	5.30	0.27 J	NA	0.29 J	0.21 J	NA
PCB74	5.40	0.29 J	NA	0.27 J	0.22 J	NA
PCB82	0.87	ND U	NA	ND U	ND U	NA
PCB83	0.46 J	ND U	NA	ND U	ND U	NA
PCB84	1.71	0.12 J	NA	ND U	ND U	NA
PCB85	1.07	0.14 J	NA	ND U	ND U	NA
PCB87/115	3.16	0.21 J	NA	ND U	ND U	NA
PCB89	2.30	0.19 J	NA	ND U	ND U	NA
PCB91	1.21	0.13 J	NA	ND U	ND U	NA
PCB92	0.96	0.13 J	NA	ND U	ND U	NA
PCB95	4.48	0.38 J	NA	0.34 J	0.41 J	NA
PCB97	1.88	ND U	NA	ND U	ND U	NA
PCB99	2.53	0.28 J	NA	ND U	ND U	NA
PCB100	0.11 J	ND U	NA	ND U	ND U	NA
PCB101/90	2.92	0.19 J	NA	ND U	ND U	NA
PCB105	2.48	0.16 J	NA	ND U	ND U	NA
PCB107	0.40 J	ND U	NA	ND U	ND U	NA
PCB110	7.97	0.57 J	NA	0.47 J	0.41 J	NA
PCB114	0.19 J	ND U	NA	ND U	ND U	NA
PCB118	5.41	0.37 J	NA	0.30 J	ND U	NA
PCB119	0.17 J	ND U	NA	ND U	ND U	NA
PCB124	0.26 J	ND U	NA	ND U	ND U	NA
PCB128	0.80	0.09 J	NA	ND U	ND U	NA
PCB129	0.19 J	ND U	NA	ND U	ND U	NA
PCB130	0.20 J	ND U	NA	ND U	ND U	NA
PCB131	0.08 J	ND U	NA	ND U	ND U	NA
PCB132	1.19	0.13 J	NA	ND U	0.24 J	NA
PCB134	0.31 J	ND U	NA	ND U	ND U	NA

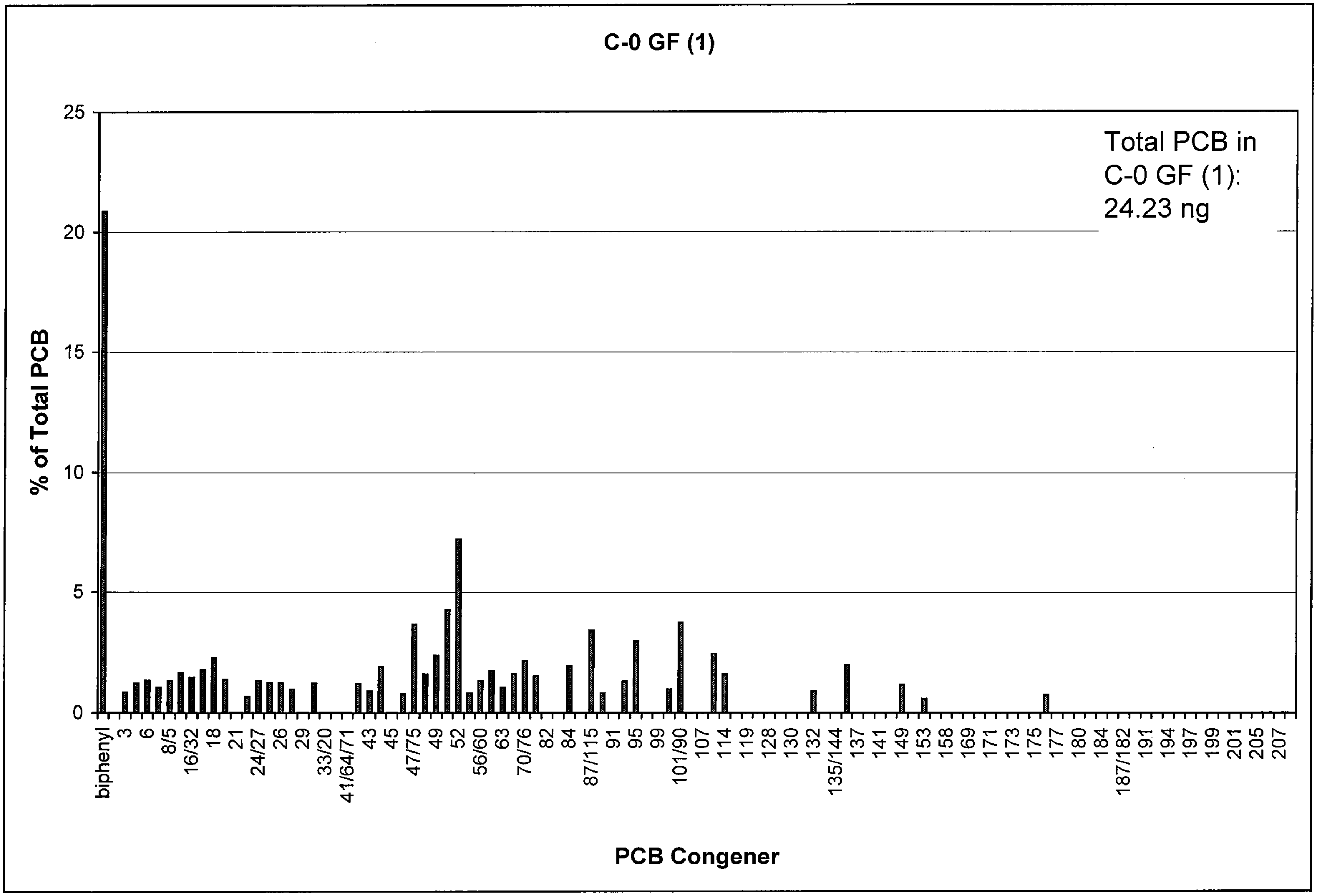
Field Sample Duplicate Data

Client Reporting Sample ID:	C-6B	C-6B	% RPD	C6-D-2	C6-D-2	% RPD
PCB135/144	0.51 J	0.11 J	NA	ND U	ND U	NA
PCB136	0.49 J	0.09 J	NA	ND U	ND U	NA
PCB137	0.20 J	ND U	NA	ND U	ND U	NA
PCB138/160/163	3.73	0.42 J	NA	0.34 J	0.71 J	NA
PCB141	0.50 J	0.07 J	NA	ND U	ND U	NA
PCB146	0.41 J	0.06 J	NA	ND U	ND U	NA
PCB149	2.16	0.32 J	NA	ND U	ND U	NA
PCB151	0.52 J	0.12 J	NA	ND U	ND U	NA
PCB153	1.91	0.28 J	NA	0.18 J	0.27 J	NA
PCB156	0.41 J	ND U	NA	ND U	ND U	NA
PCB158	0.44 J	0.09 J	NA	ND U	ND U	NA
PCB167	0.15 J	ND U	NA	ND U	ND U	NA
PCB169	ND U	ND U	NA	ND U	ND U	NA
PCB170/190	0.28 J	ND U	NA	ND U	ND U	NA
PCB171	0.09 J	ND U	NA	ND U	ND U	NA
PCB172	ND U	ND U	NA	ND U	ND U	NA
PCB173	ND U	ND U	NA	ND U	ND U	NA
PCB174	0.17 J	ND U	NA	ND U	ND U	NA
PCB175	ND U	ND U	NA	ND U	ND U	NA
PCB176	ND U	ND U	NA	ND U	ND U	NA
PCB177	0.11 J	ND U	NA	ND U	ND U	NA
PCB178	ND U	ND U	NA	ND U	ND U	NA
PCB180	0.28 J	ND U	NA	ND U	ND U	NA
PCB183	0.11 J	ND U	NA	ND U	ND U	NA
PCB184	ND U	0.07 J	NA	ND U	ND U	NA
PCB185	ND U	ND U	NA	ND U	ND U	NA
PCB187/182	0.15 J	ND U	NA	ND U	ND U	NA
PCB189	ND U	ND U	NA	ND U	ND U	NA
PCB191	ND U	ND U	NA	ND U	ND U	NA
PCB193	ND U	ND U	NA	ND U	ND U	NA
PCB194	ND U	ND U	NA	ND U	ND U	NA
PCB195	ND U	ND U	NA	ND U	ND U	NA
PCB197	ND U	ND U	NA	ND U	ND U	NA
PCB198	ND U	ND U	NA	ND U	ND U	NA
PCB199	ND U	ND U	NA	ND U	ND U	NA
PCB200	ND U	ND U	NA	ND U	ND U	NA
PCB201	ND U	ND U	NA	ND U	ND U	NA
PCB203/196	ND U	ND U	NA	ND U	ND U	NA
PCB205	ND U	ND U	NA	ND U	ND U	NA
PCB206	ND U	ND U	NA	ND U	ND U	NA
PCB207	ND U	ND U	NA	ND U	ND U	NA
PCB209	ND U	ND U	NA	ND U	ND U	NA
Biphenyl	0.48 J	0.48 J	NA	1.14 J	1.27 J	NA
Surrogate Recovery (%)						
PCB104	72	74		80	75	
PCB14	71	75		70	66	
PCB34	66	68		64	61	
PCB112	74	72		72	67	

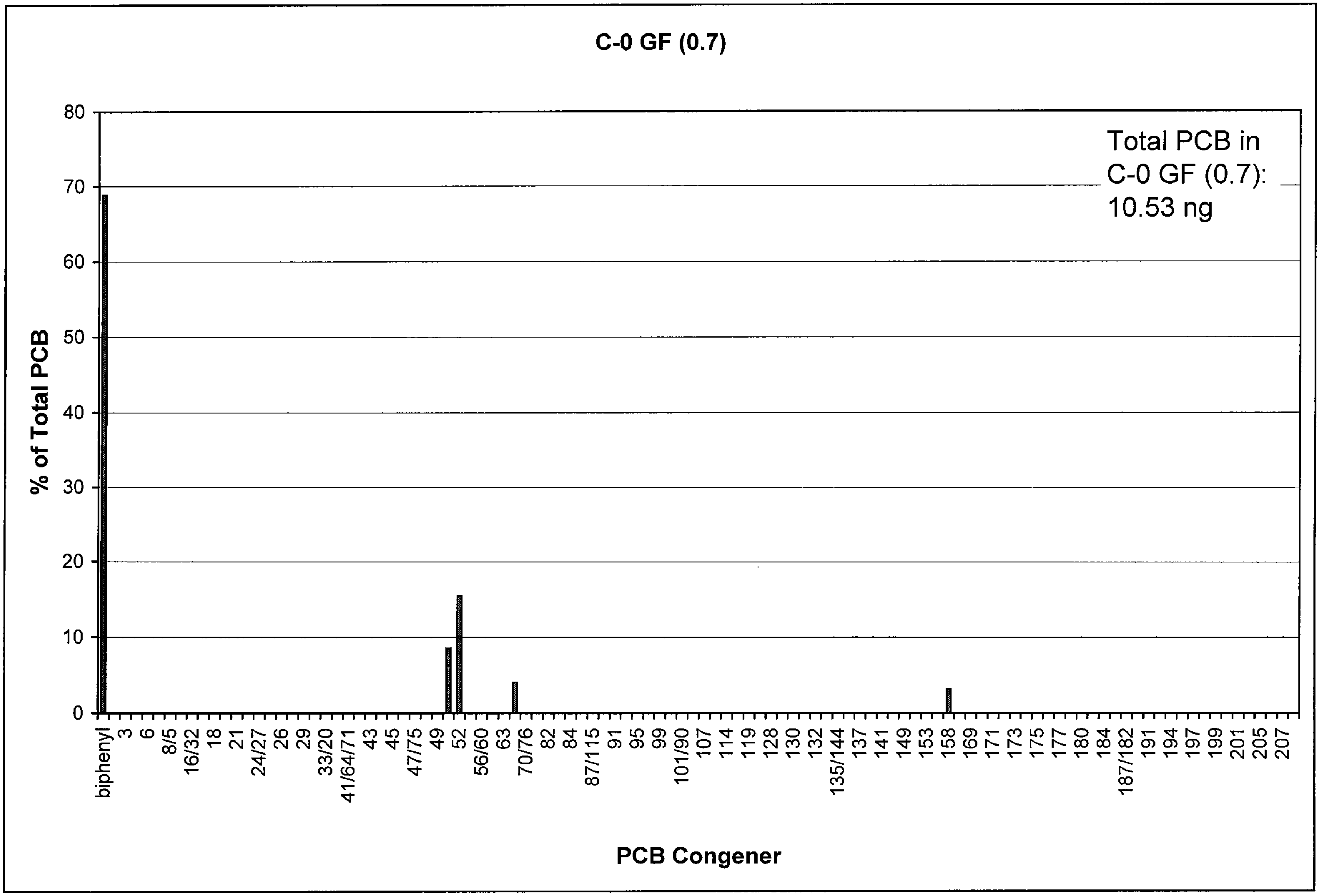
U = Analyte not detected, "ND" reported.
& = QC value outside the accuracy or precis
NA = Not Applicable.
J = Detected, but below the sample specific
Y = Peak area higher than the highest calibr
D = Diluted sample concentration reported fc

APPENDIX F

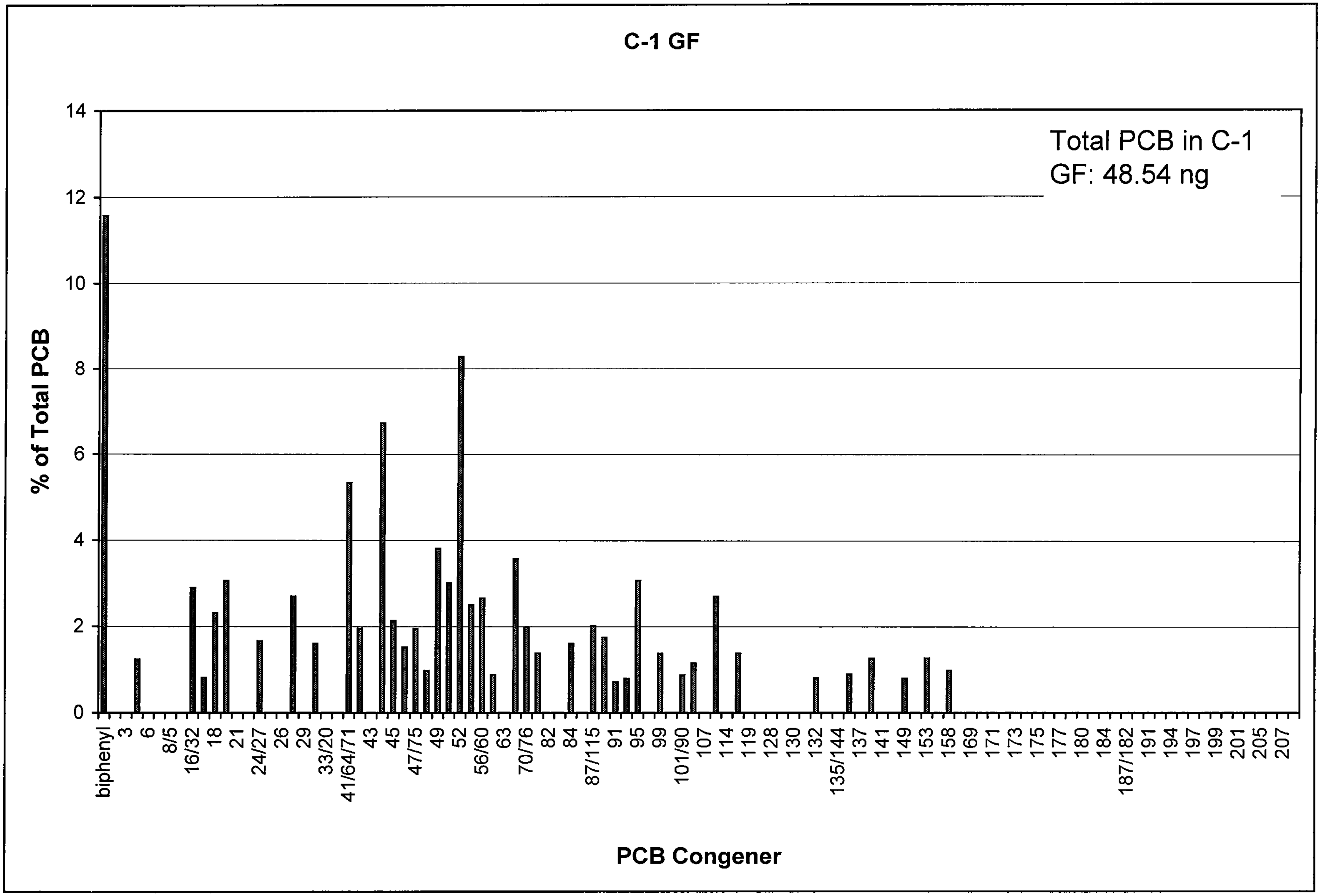
PCB COMPOSITION PLOTS FOR INDIVIDUAL CONGENERS FOR ALL SEDIMENT SAMPLES AND NINE AROCLOR FORMULATIONS



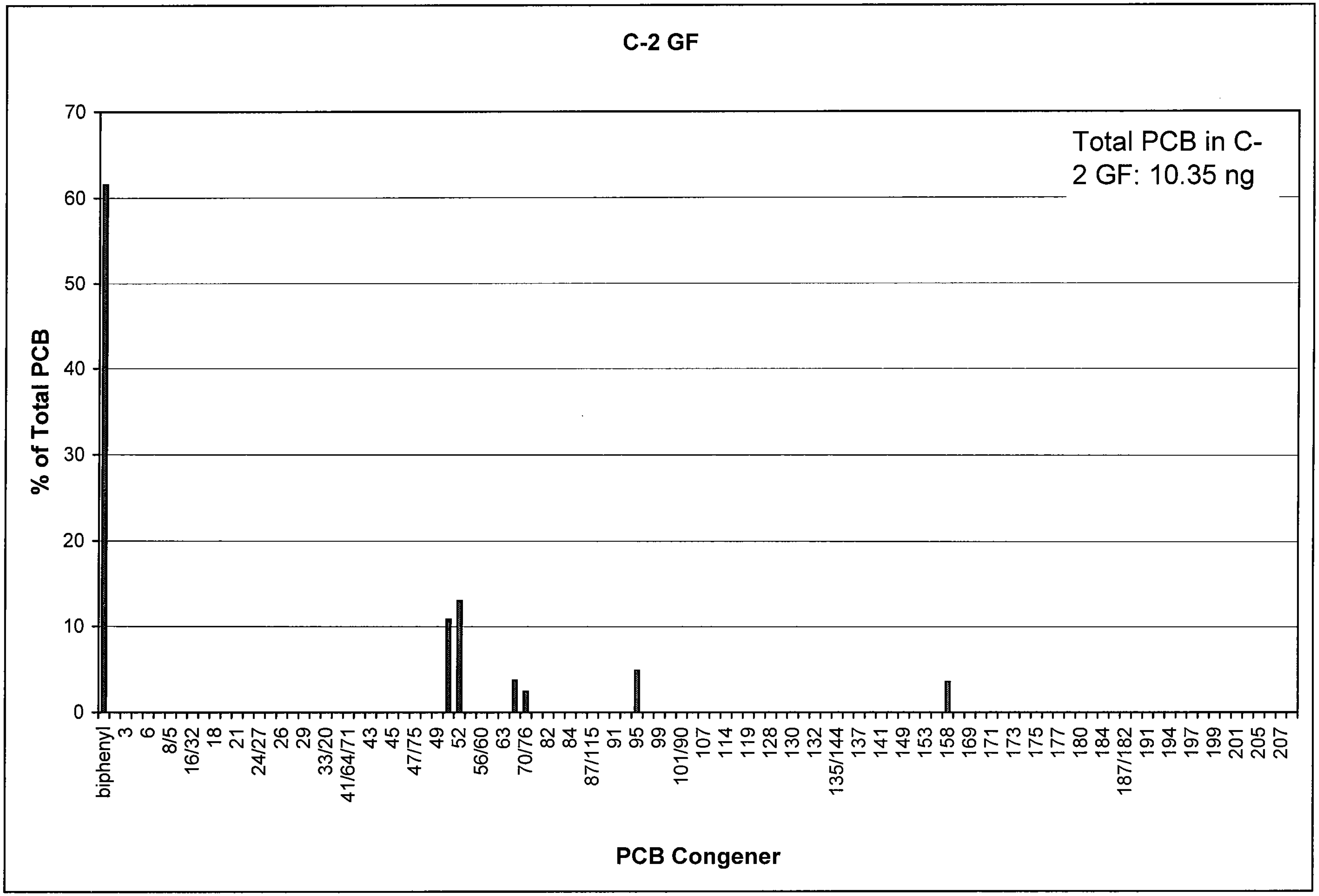
C-0 GF (1)
Total PCB in C-0 GF (1): 24.23 ng
% of Total PCB
0
5
10
15
20
25
PCB Congener
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

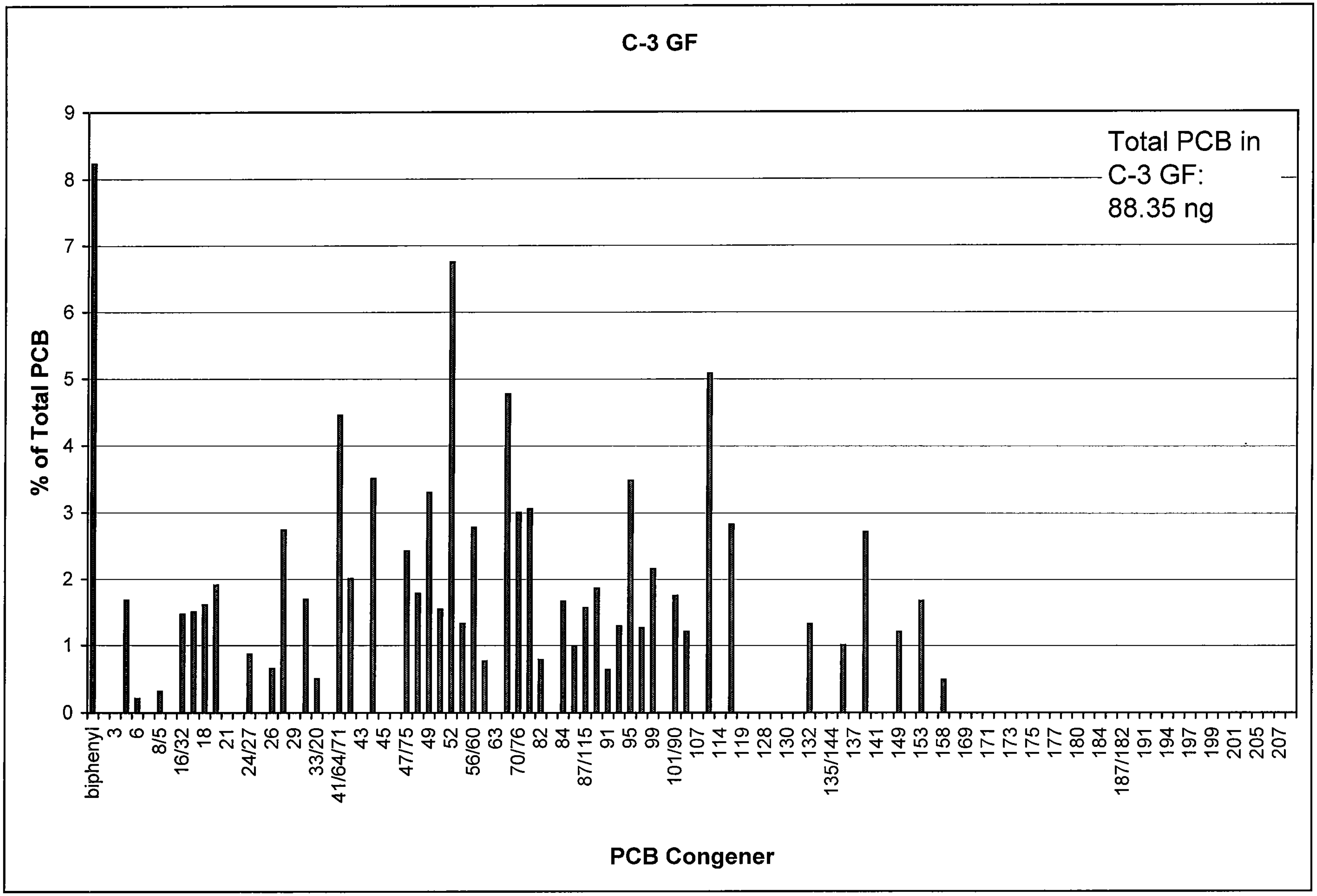


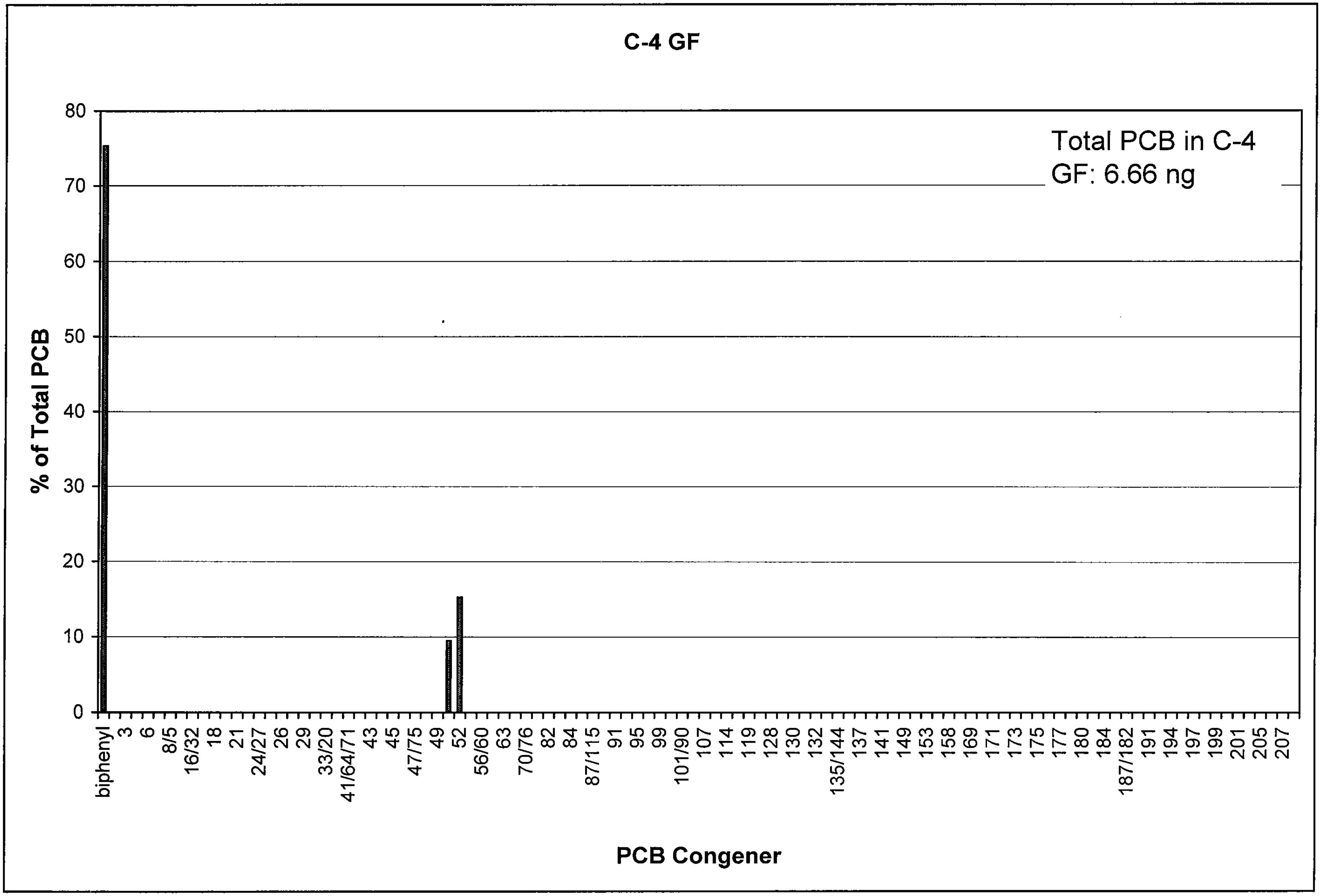
C-0 GF (0.7)
Total PCB in
C-0 GF (0.7):
10.53 ng
% of Total PCB
80
70
60
50
40
30
20
10
0
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener



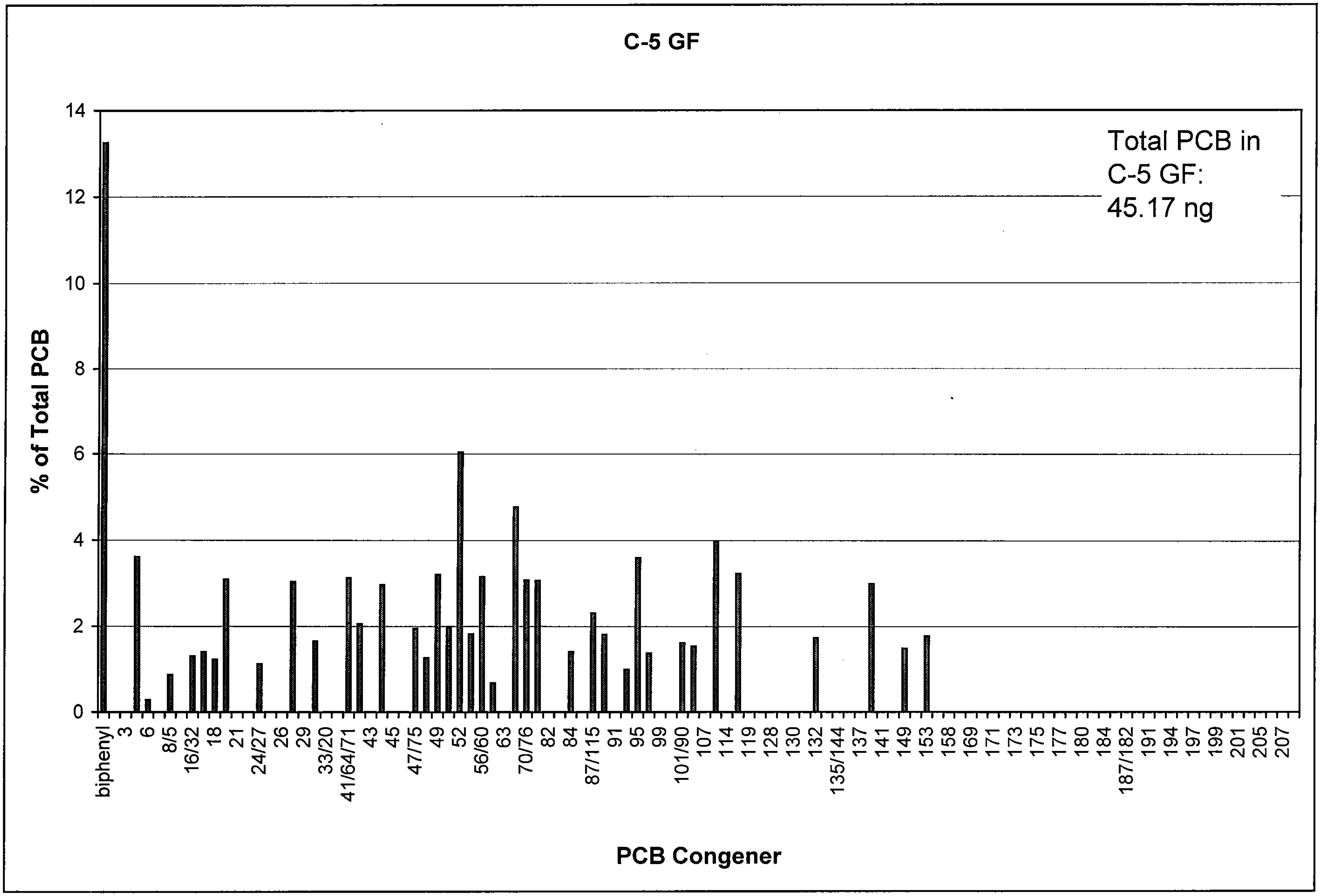
C-1 GF
Total PCB in C-1
GF: 48.54 ng
% of Total PCB
14
12
10
8
6
4
2
0
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

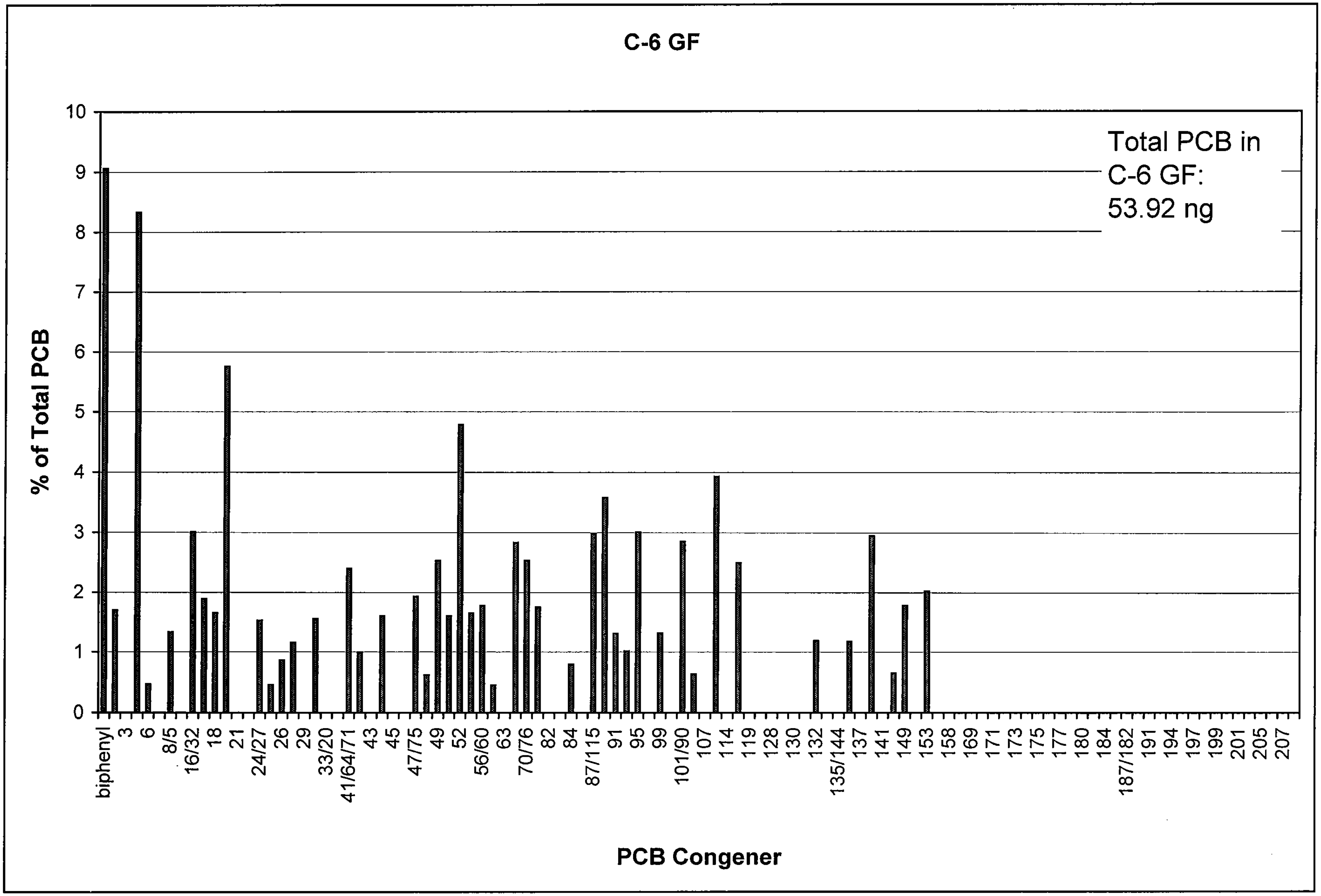

C-2 GF
Total PCB in C-2 GF: 10.35 ng
% of Total PCB
0
10
20
30
40
50
60
70
PCB Congener
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207


C-3 GF
Total PCB in C-3 GF: 88.35 ng
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

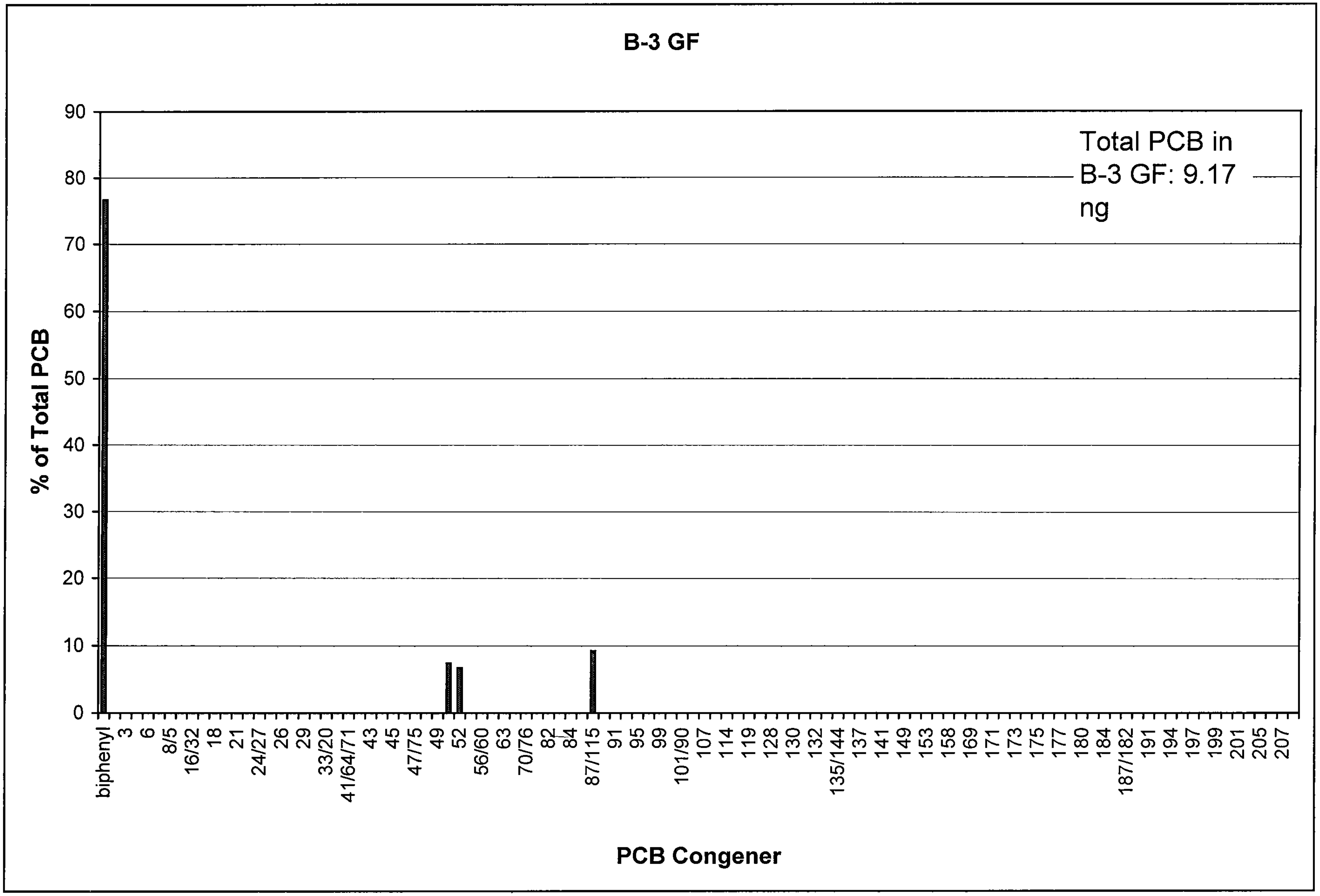


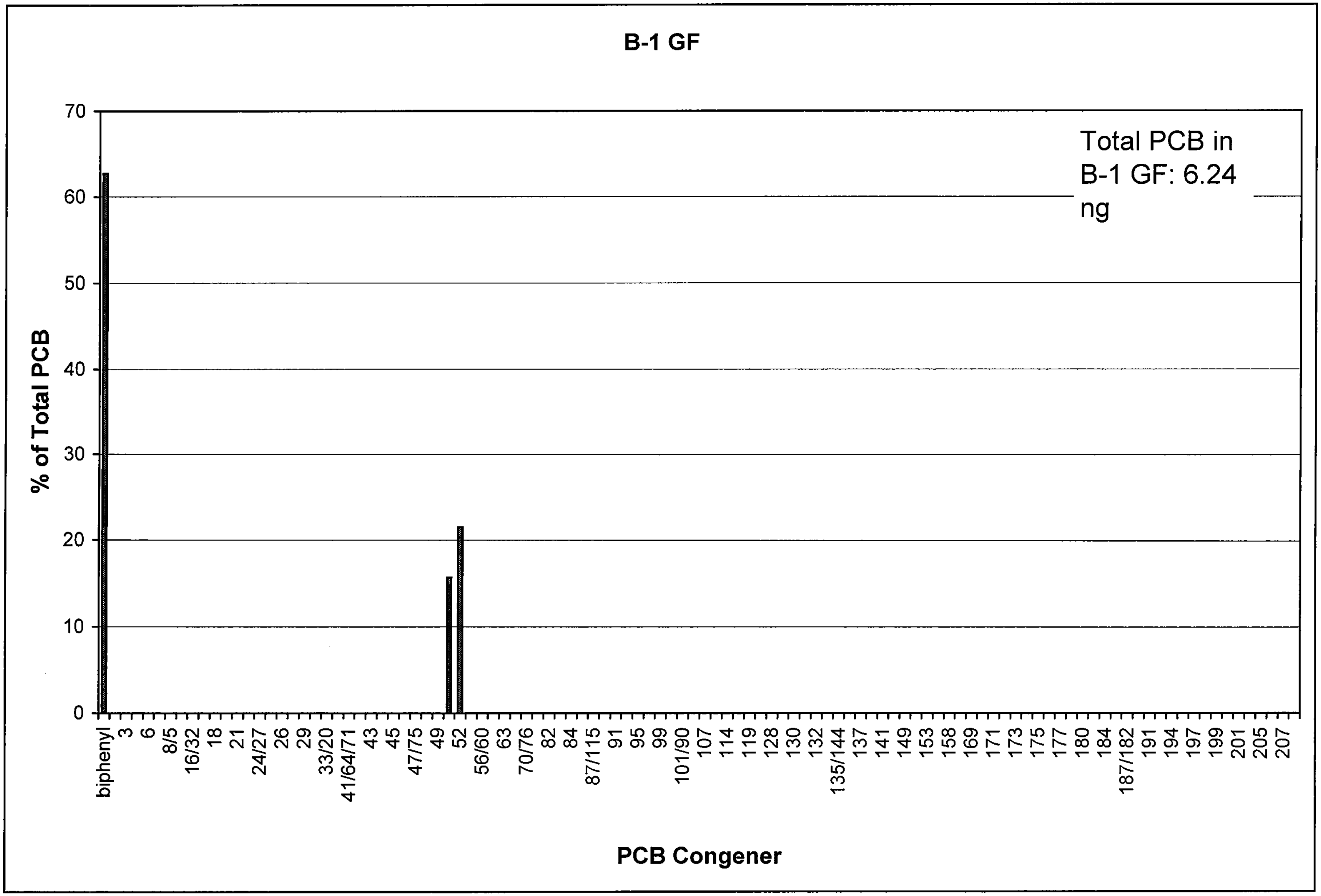
C-4 GF
Total PCB in C-4 GF: 6.66 ng
% of Total PCB
0
10
20
30
40
50
60
70
80
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener


C-5 GF
Total PCB in C-5 GF: 45.17 ng
% of Total PCB
PCB Congener
14
12
10
8
6
4
2
0
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

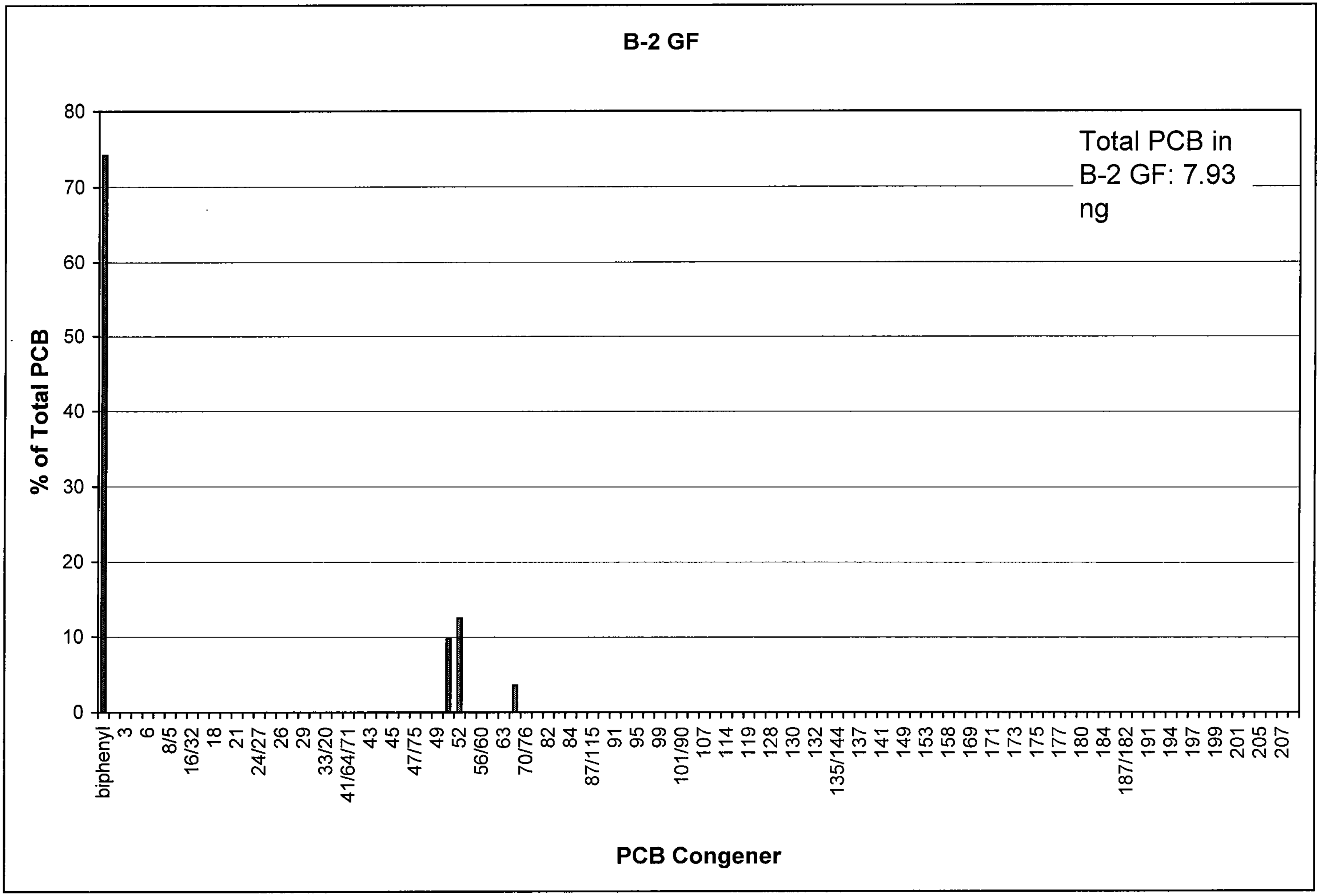


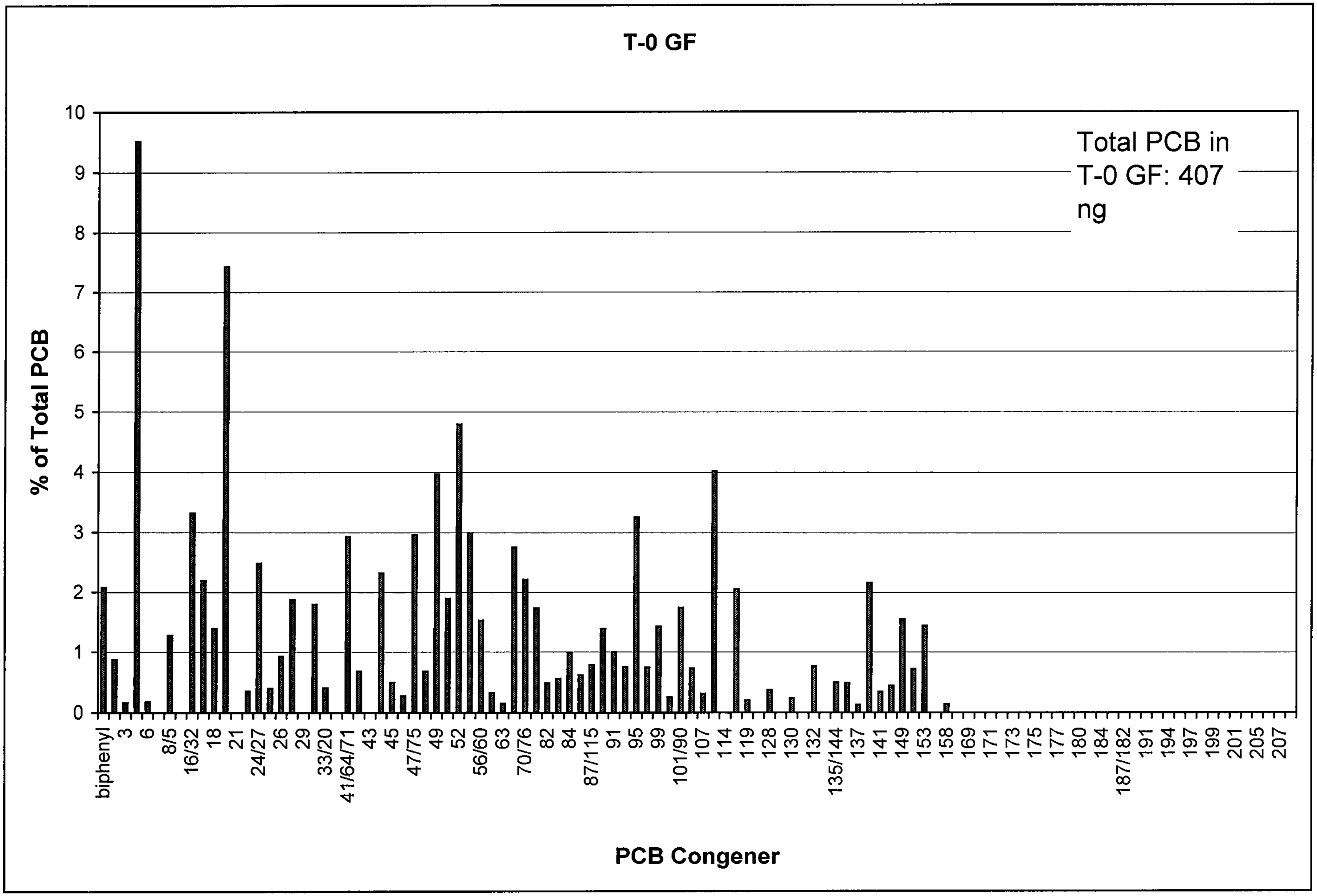
C-6 GF
Total PCB in C-6 GF: 53.92 ng
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
10
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

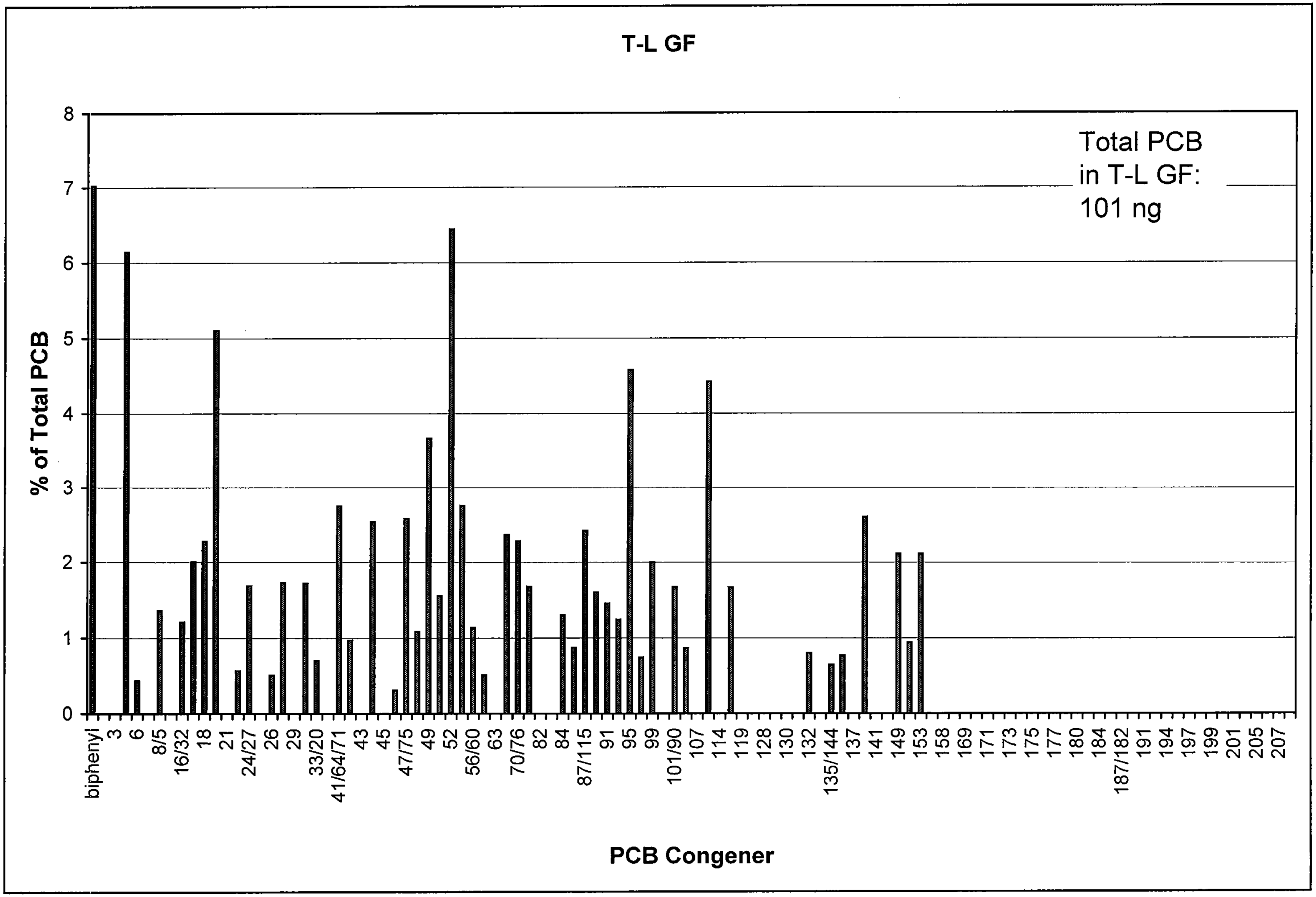

B-3 GF
Total PCB in B-3 GF: 9.17 ng
% of Total PCB
0
10
20
30
40
50
60
70
80
90
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

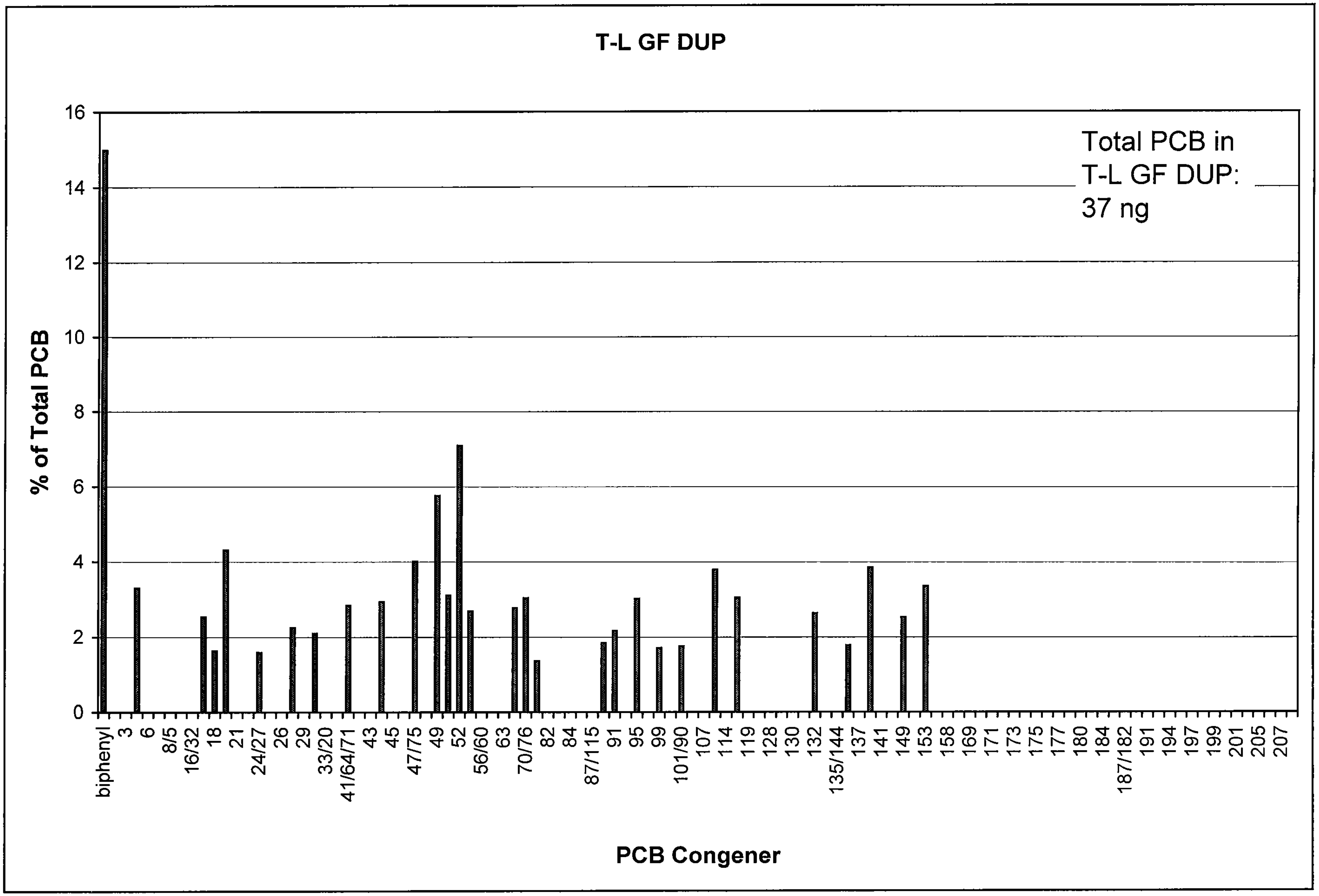


B-1 GF
Total PCB in B-1 GF: 6.24 ng
% of Total PCB
0
10
20
30
40
50
60
70
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

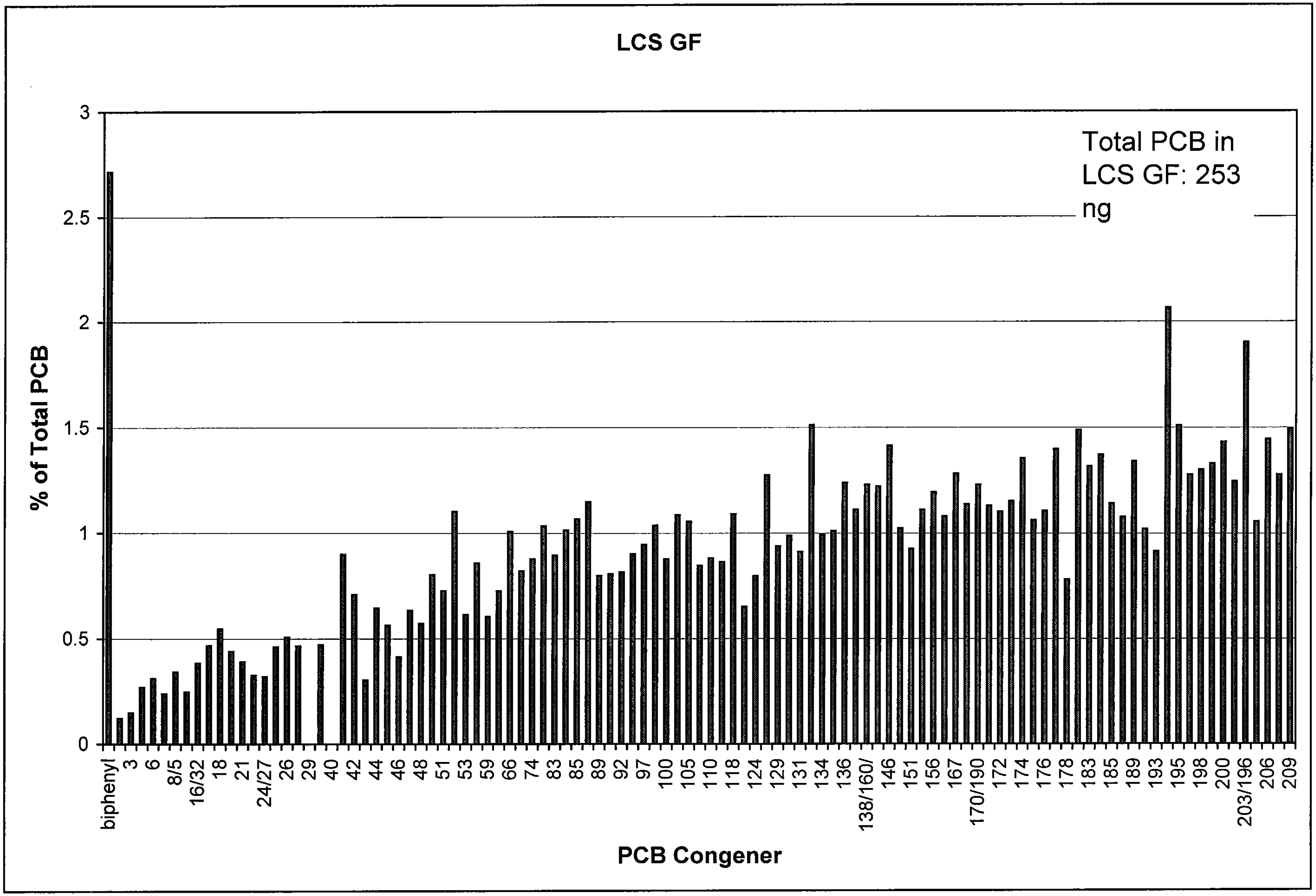

B-2 GF
Total PCB in B-2 GF: 7.93 ng
% of Total PCB
0
10
20
30
40
50
60
70
80
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

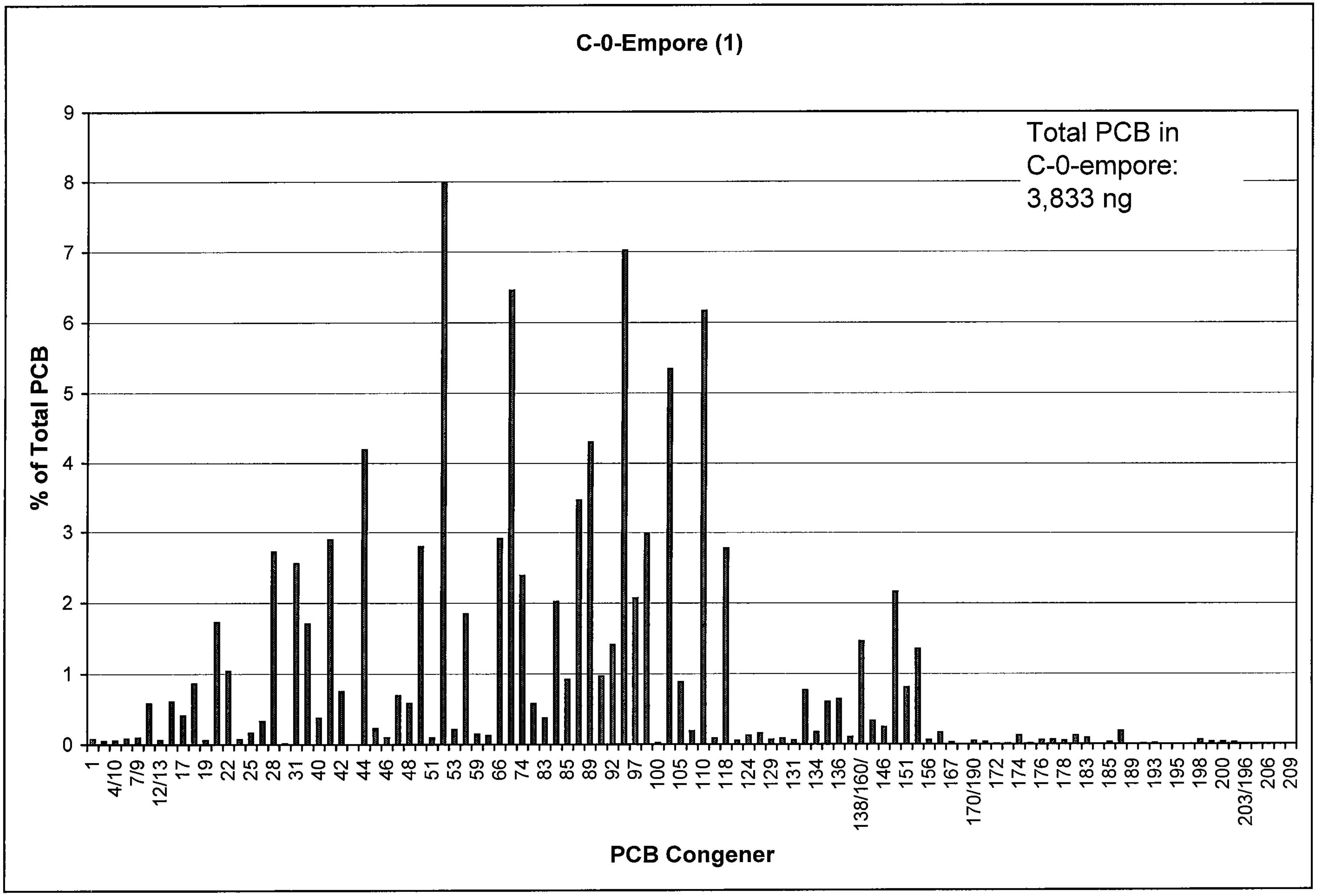

T-0 GF
Total PCB in T-0 GF: 407 ng
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
10
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

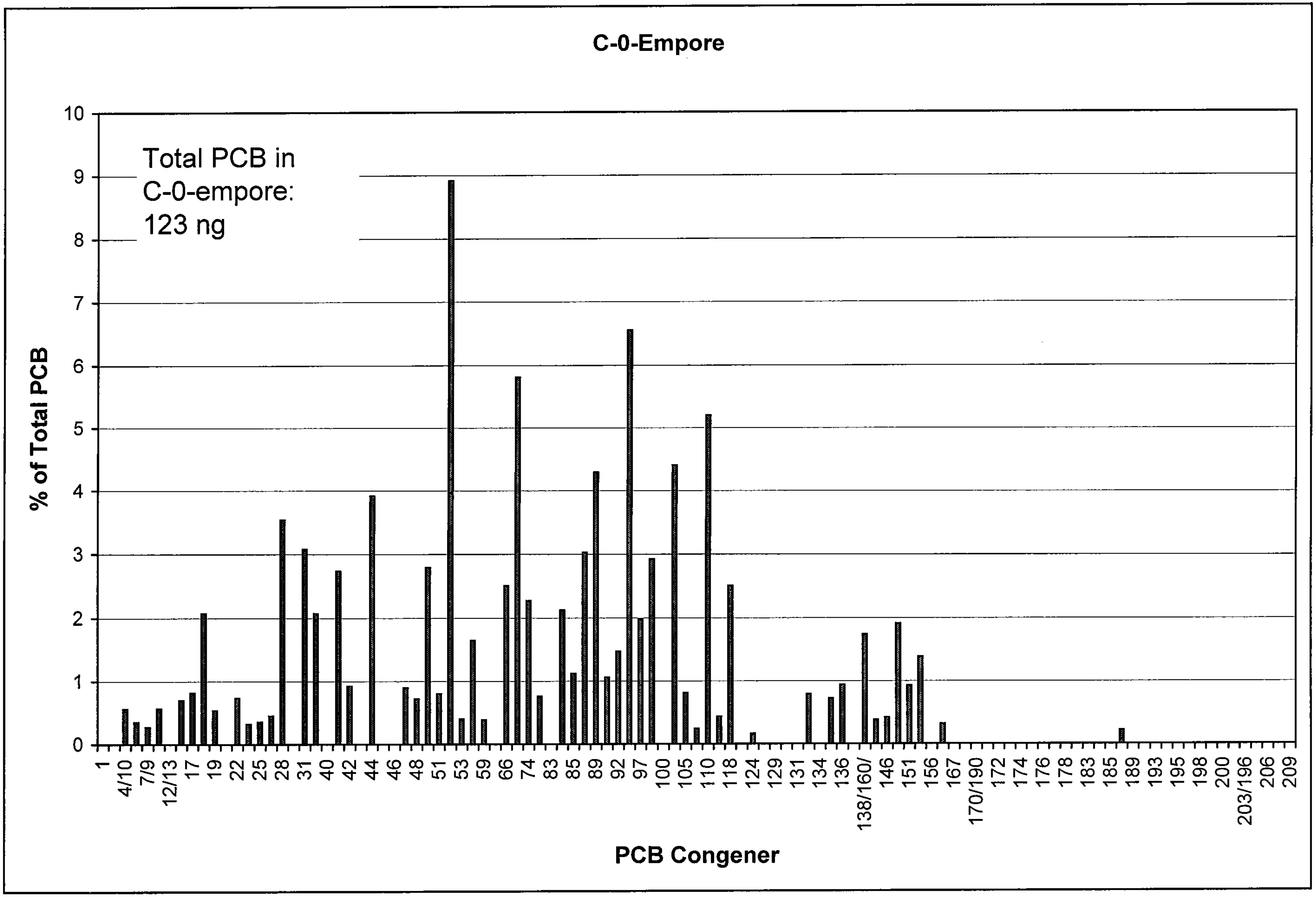

T-L GF
% of Total PCB
Total PCB
in T-L GF:
101 ng
0
1
2
3
4
5
6
7
8
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener



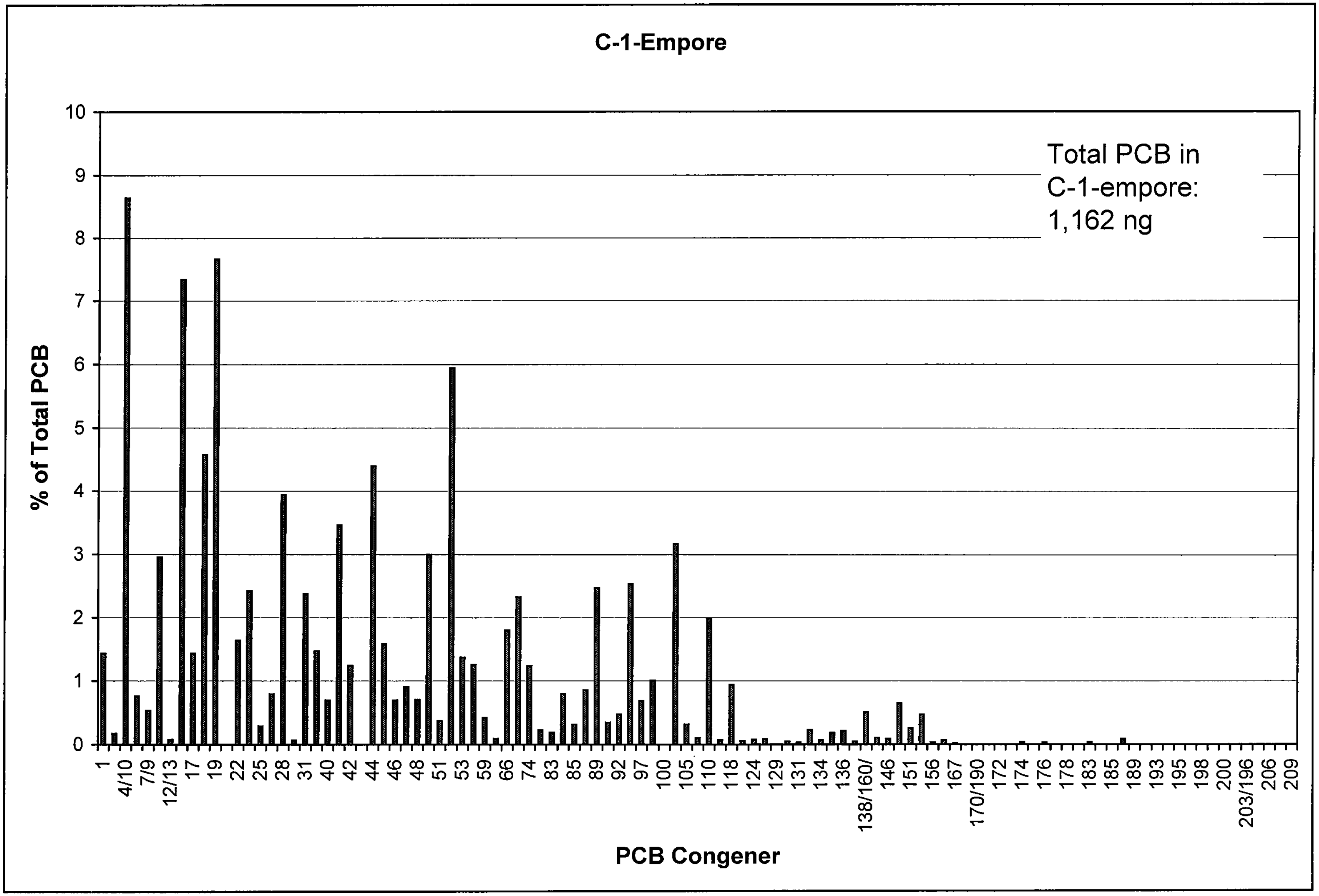
T-L GF DUP
Total PCB in
T-L GF DUP:
37 ng
% of Total PCB
0
2
4
6
8
10
12
14
16
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener


LCS GF
Total PCB in LCS GF: 253 ng
% of Total PCB
0
0.5
1
1.5
2
2.5
3
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

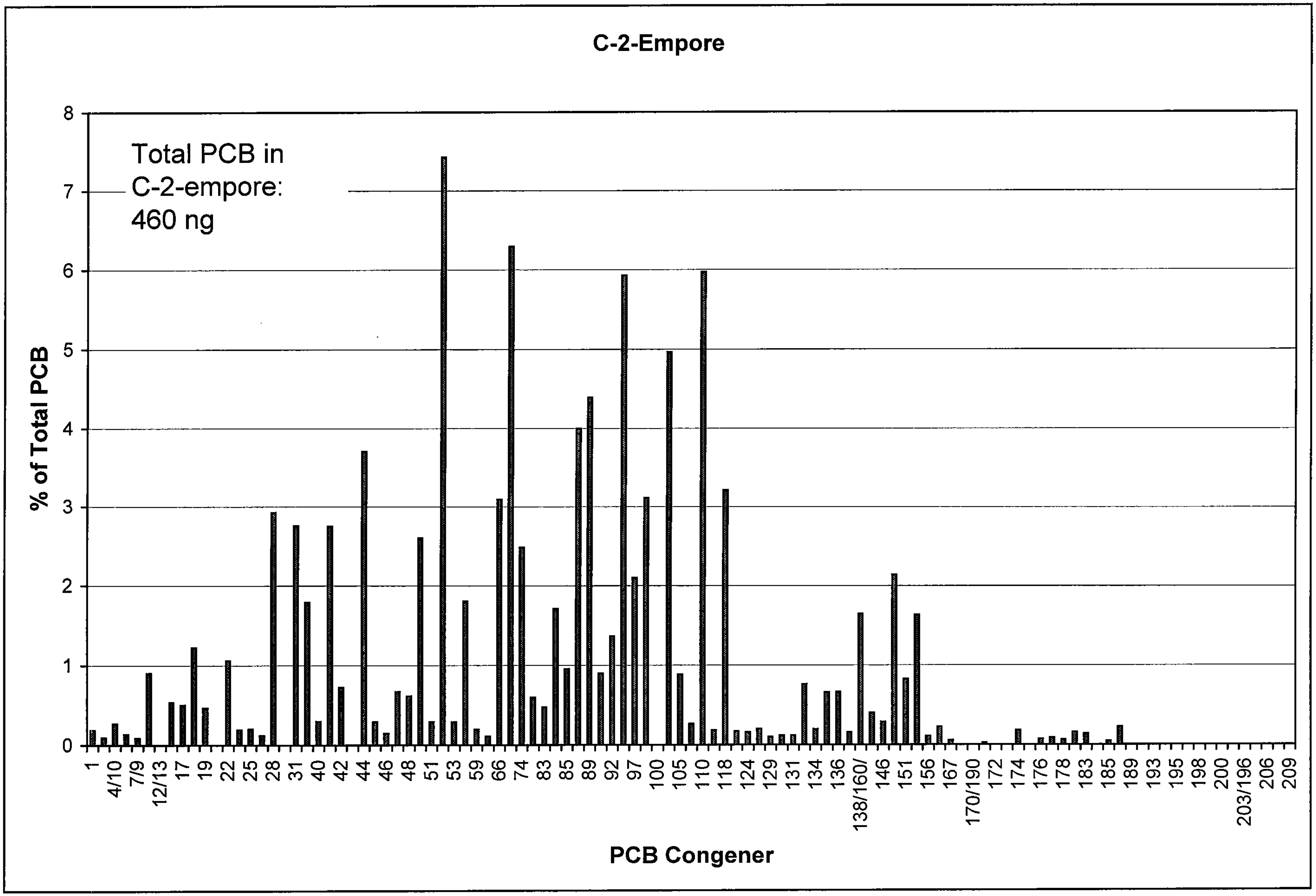

C-0-Empore (1)
Total PCB in C-0-empore: 3,833 ng
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



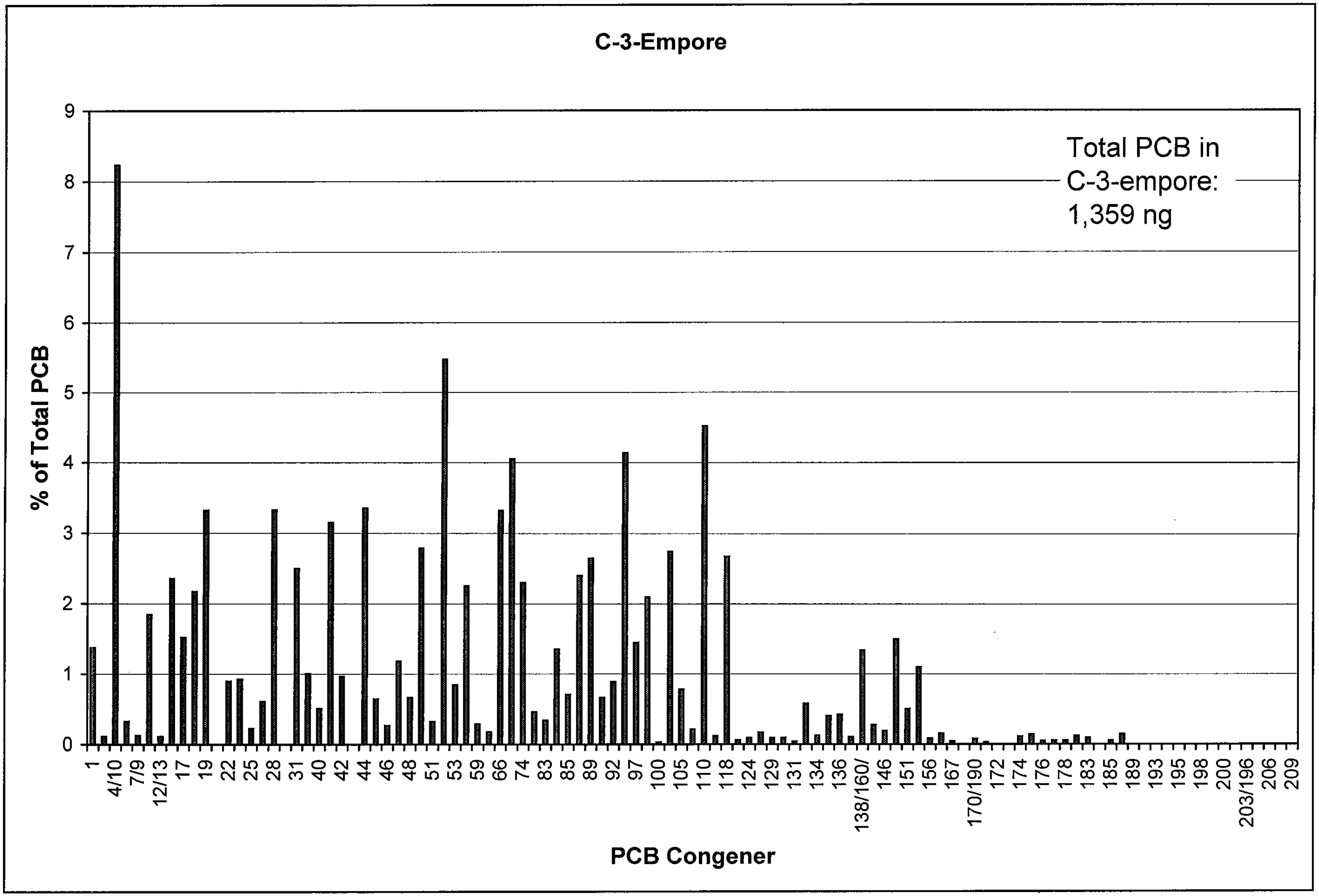
C-0-Empore
Total PCB in C-0-empore: 123 ng
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
10
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

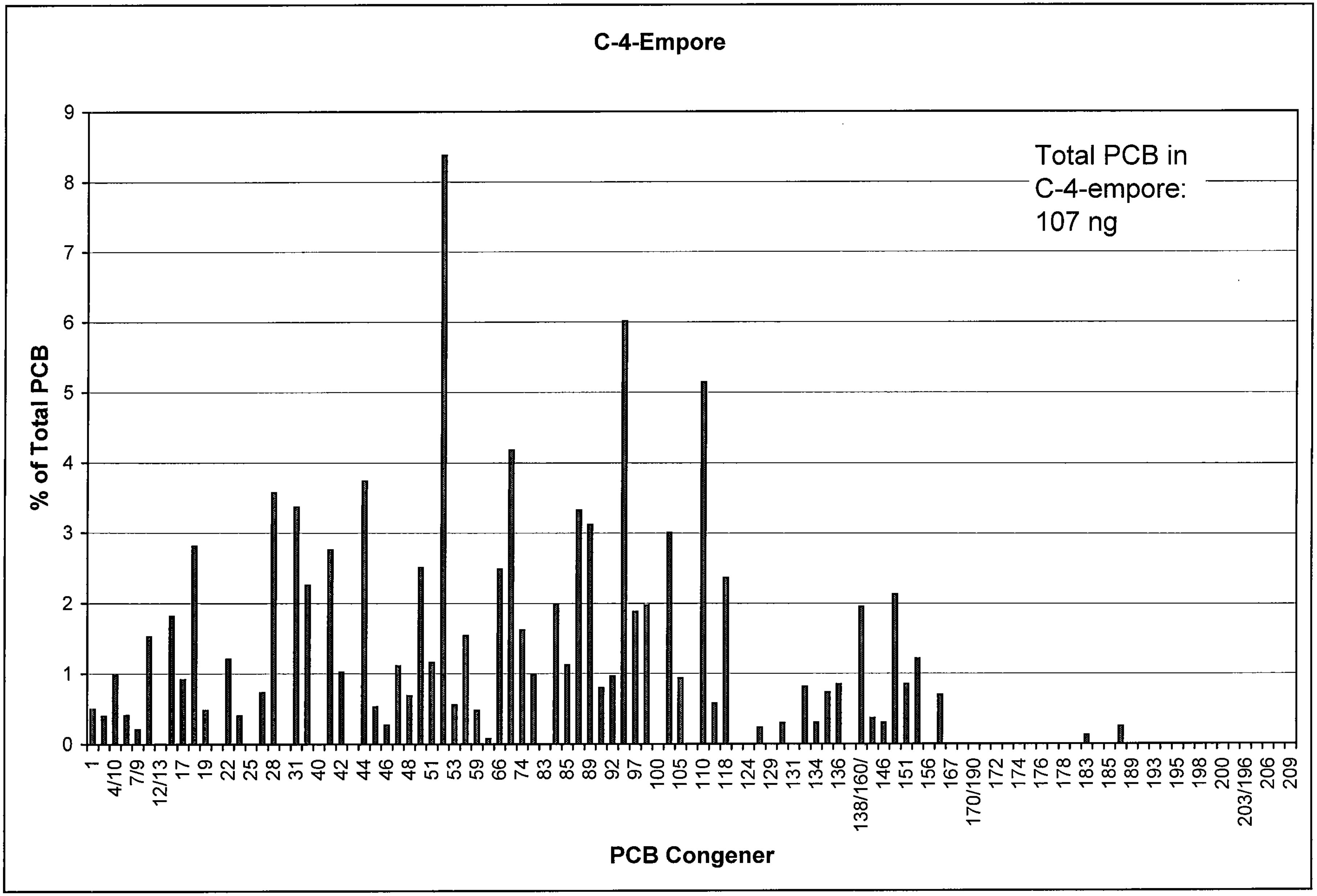


C-1-Empore
Total PCB in C-1-empore: 1,162 ng
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
10
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

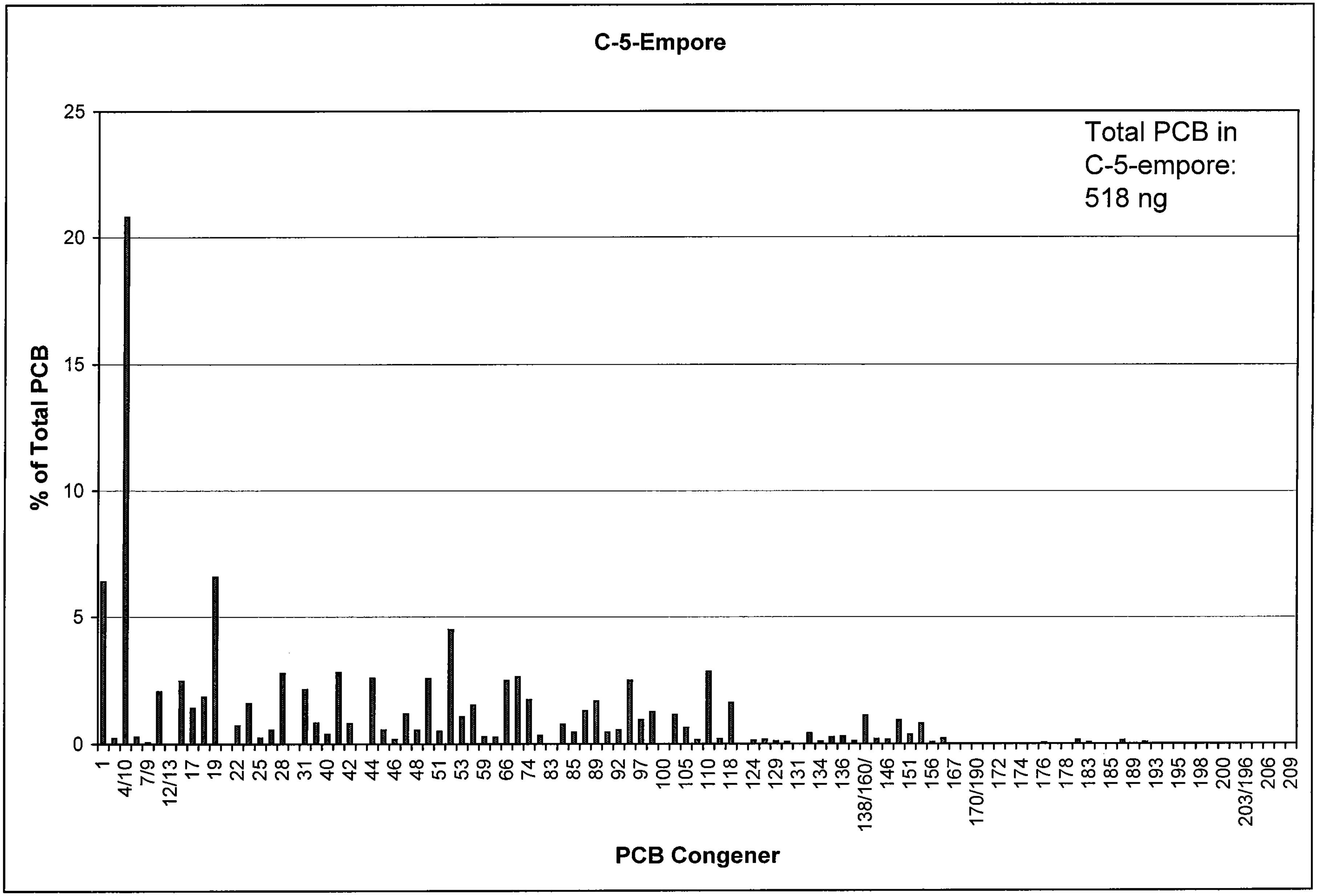


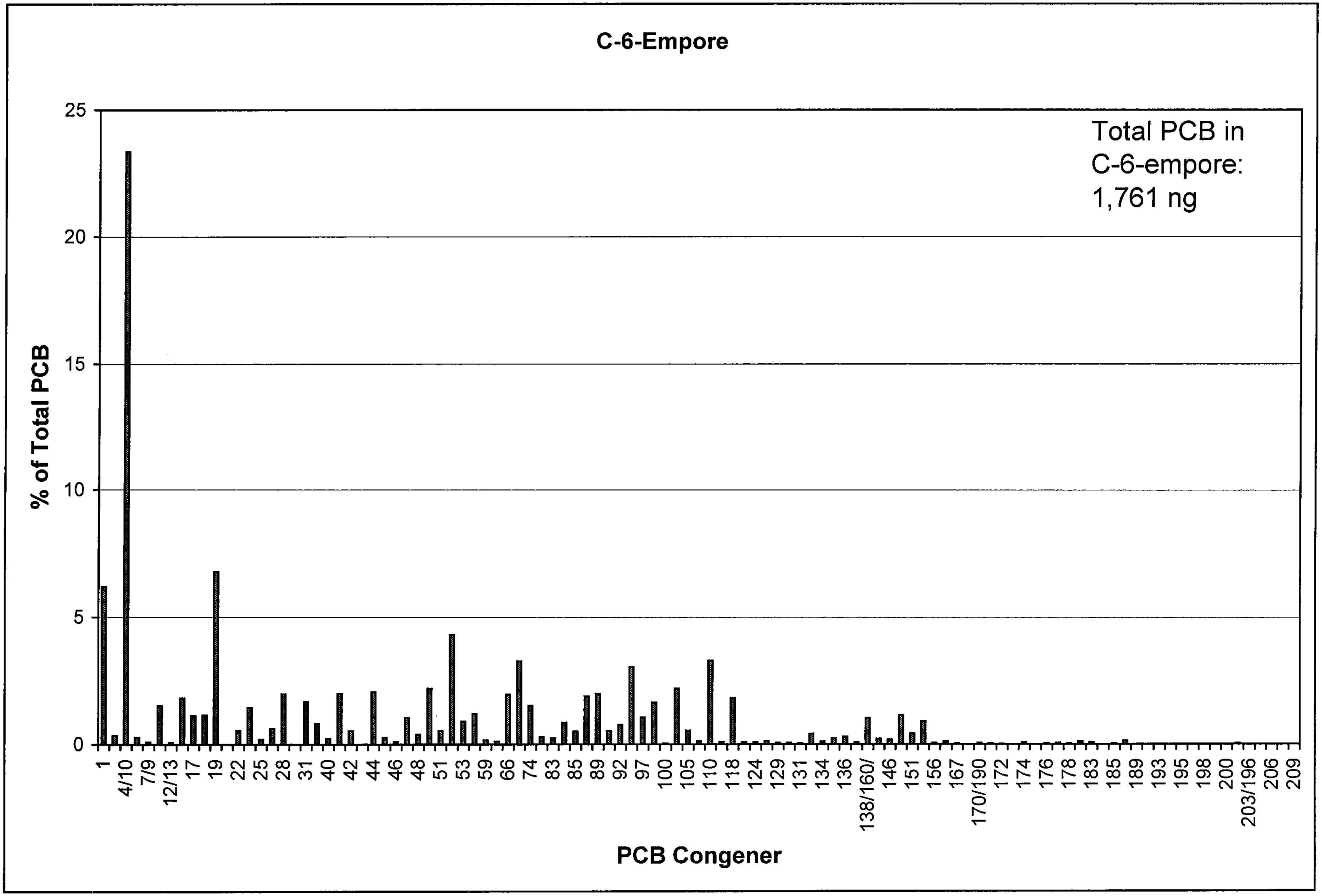
C-2-Empore
Total PCB in C-2-empore: 460 ng
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209


C-3-Empore
Total PCB in
C-3-empore:
1,359 ng
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

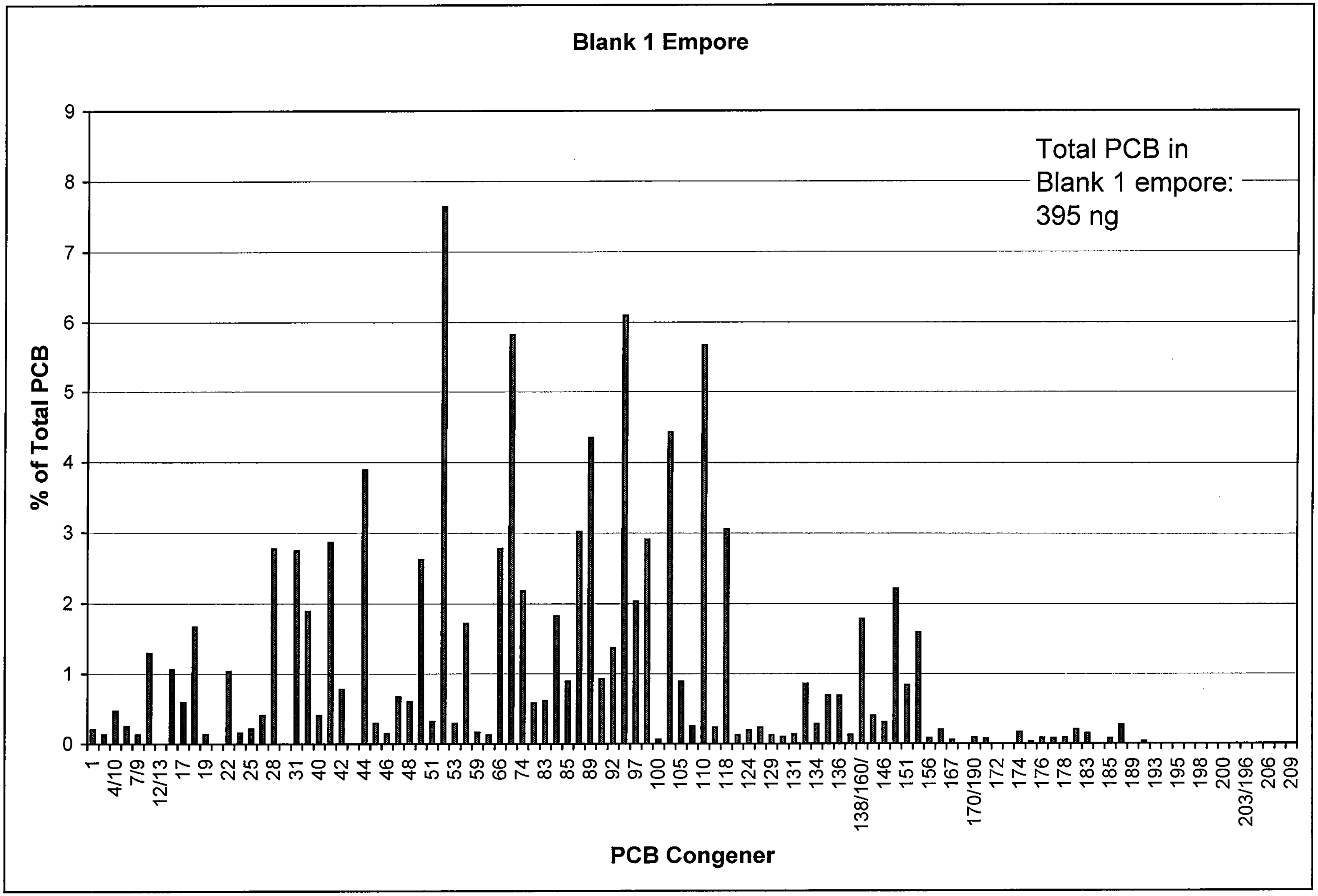


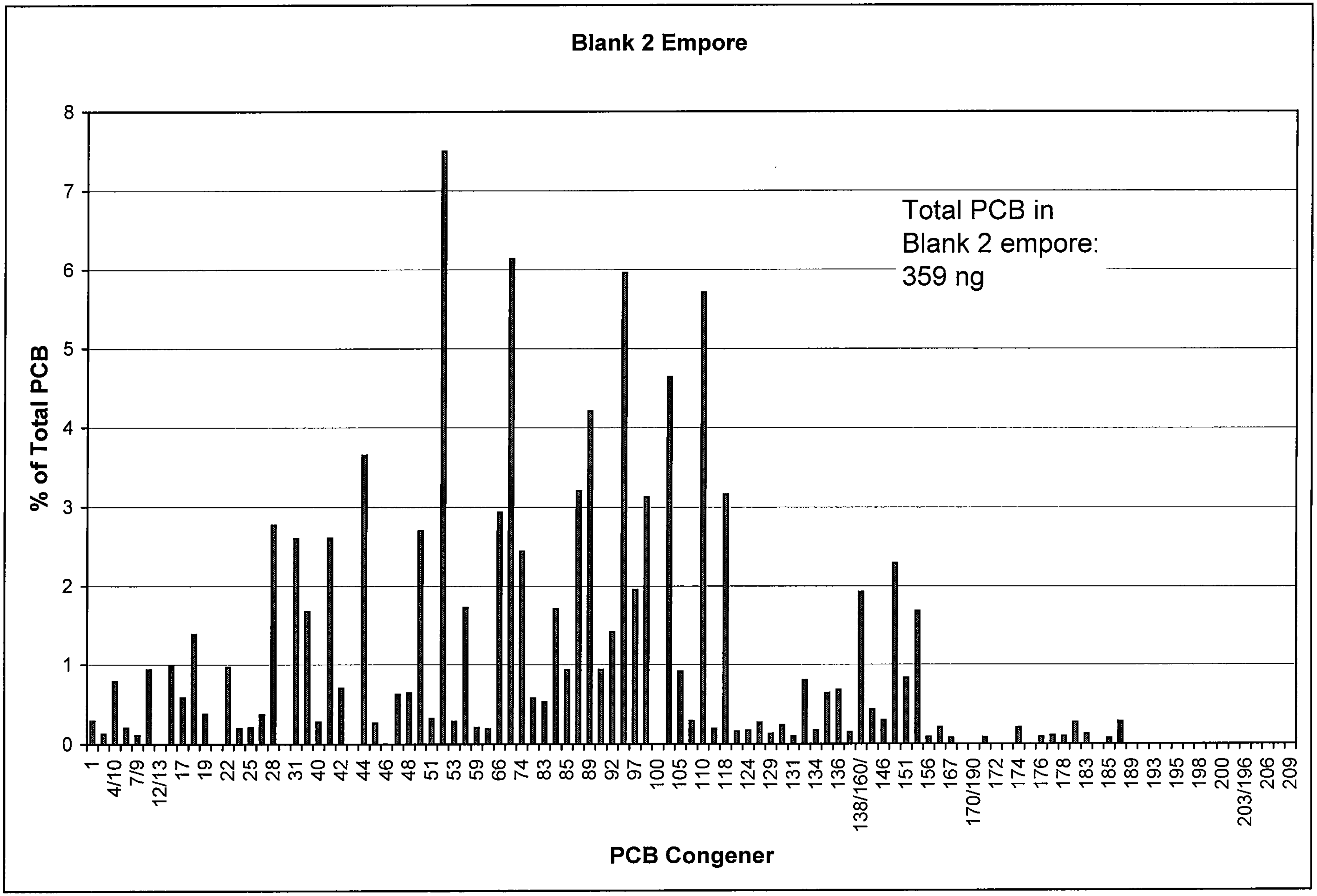
C-4-Empore
Total PCB in C-4-empore: 107 ng
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209


C-5-Empore
Total PCB in
C-5-empore:
518 ng
% of Total PCB
0
5
10
15
20
25
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

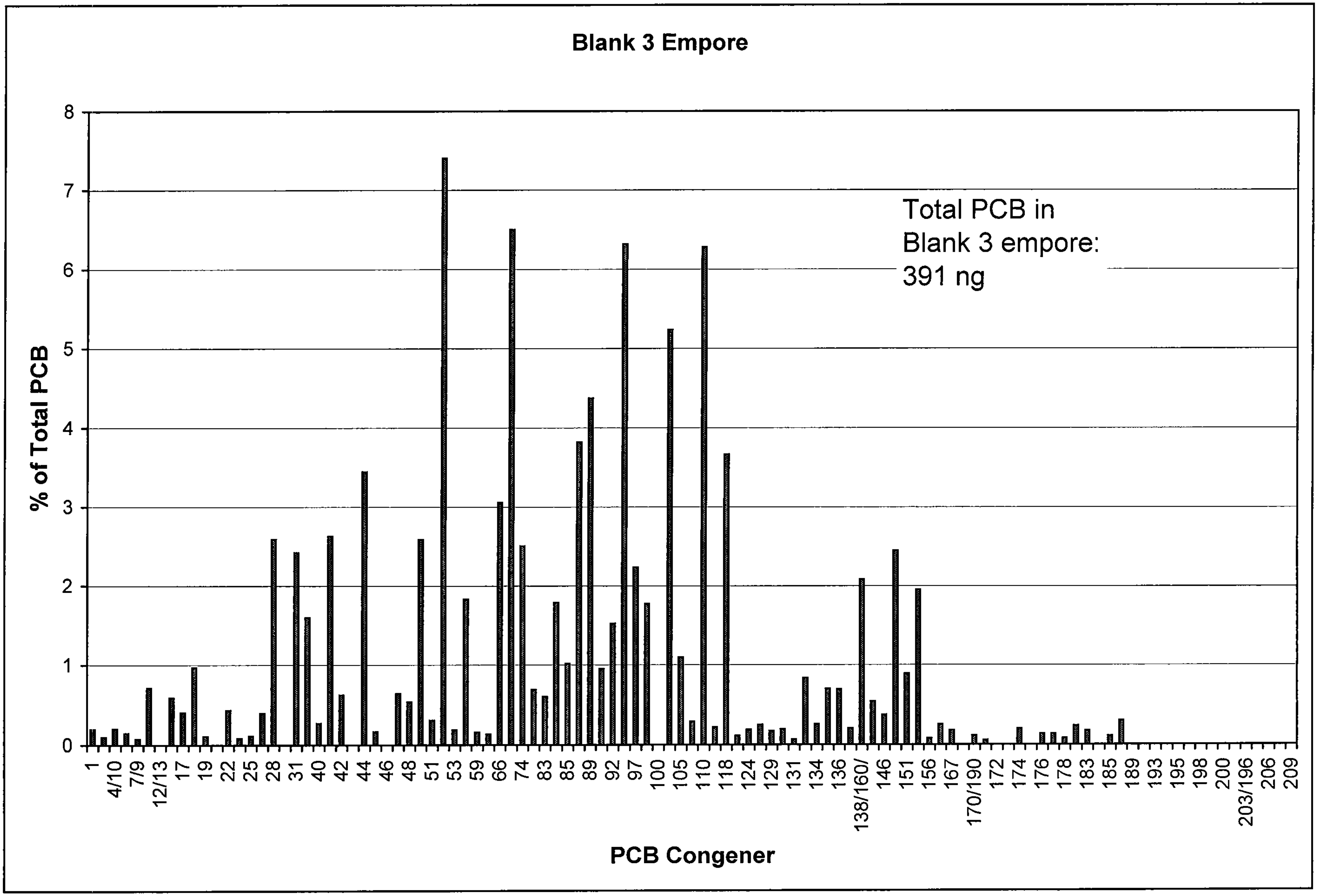


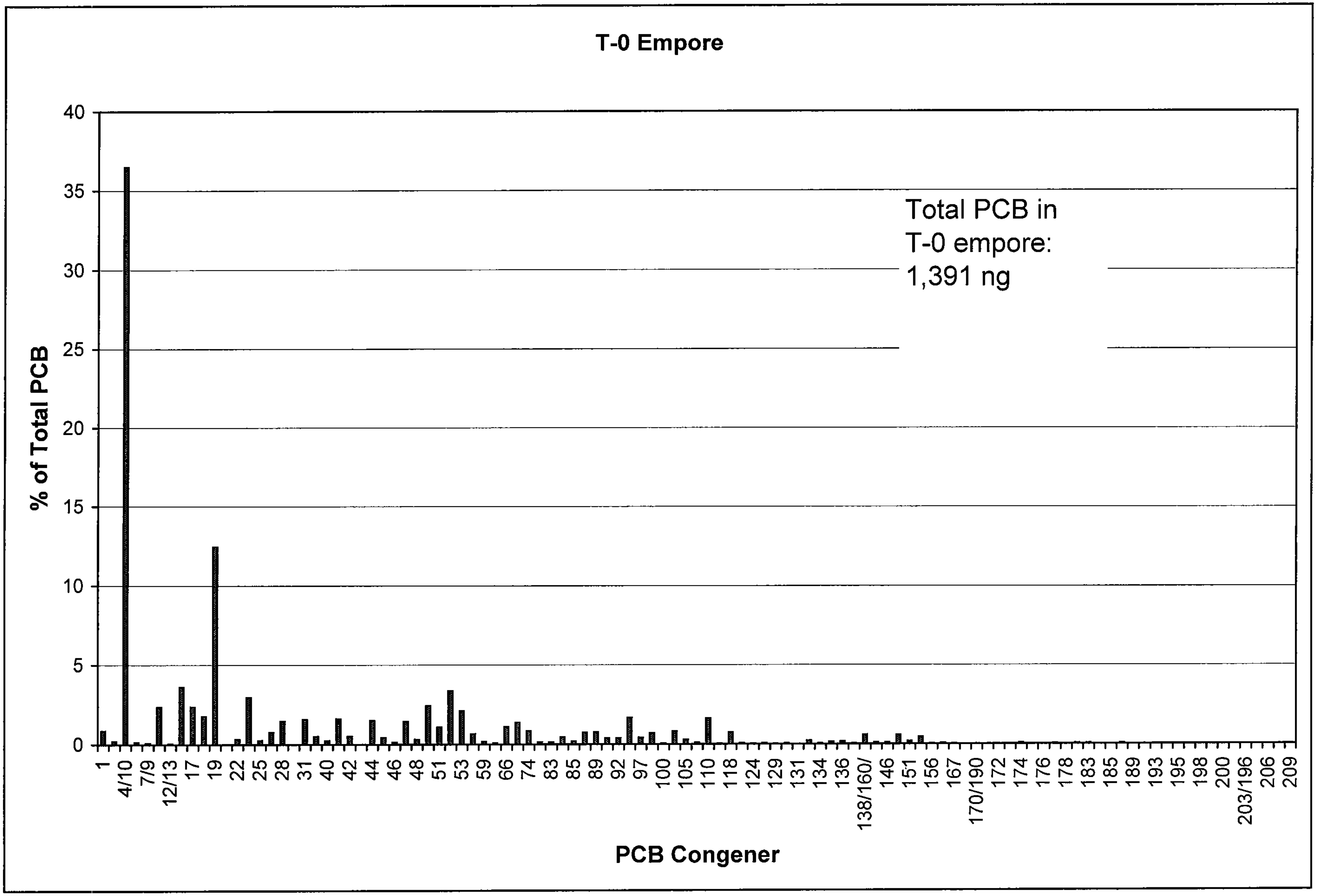
C-6-Empore
Total PCB in C-6-empore: 1,761 ng
% of Total PCB
PCB Congener
0
5
10
15
20
25
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209


Blank 1 Empore
Total PCB in
Blank 1 empore:
395 ng
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

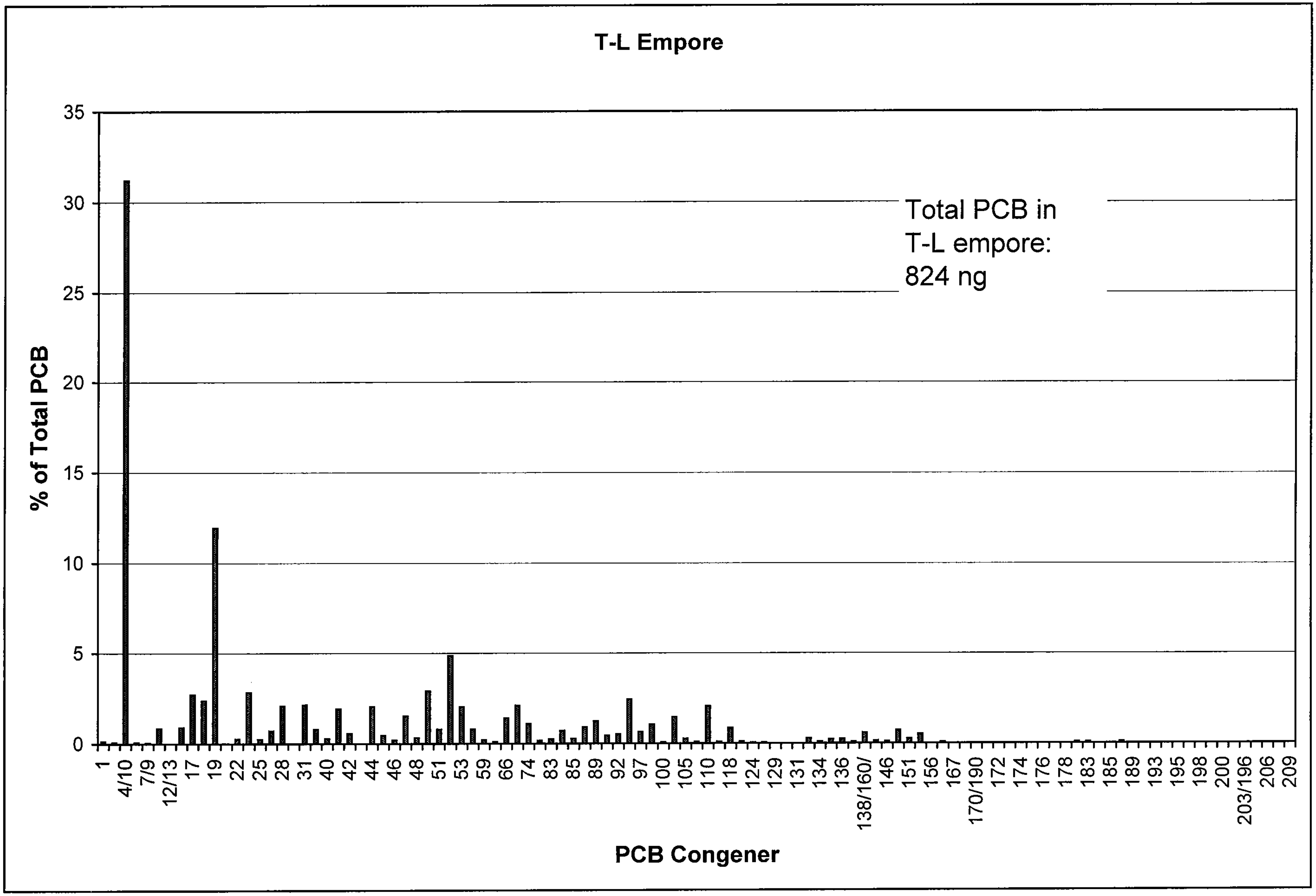


Blank 2 Empore
Total PCB in
Blank 2 empore:
359 ng
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

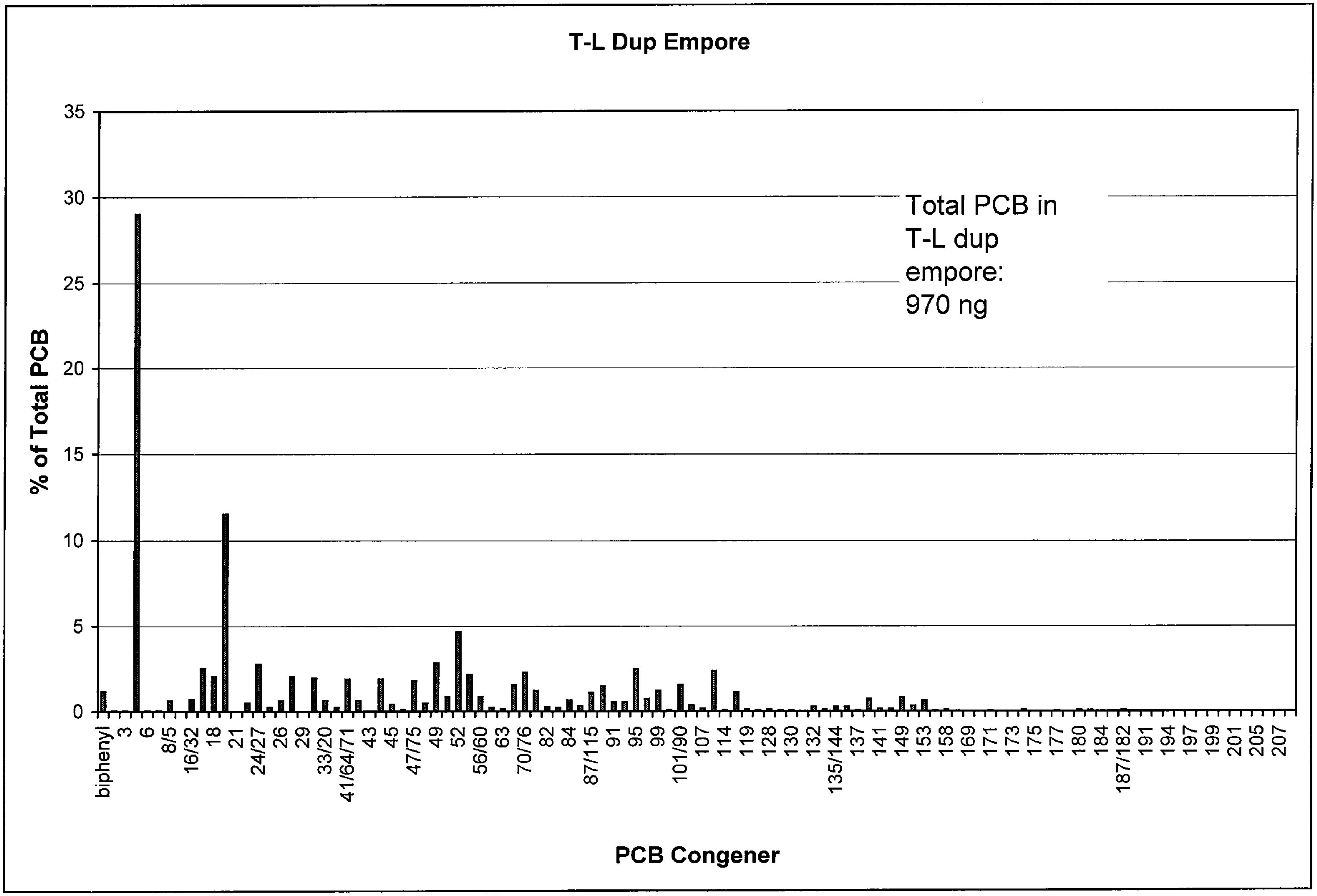

Blank 3 Empore
Total PCB in Blank 3 empore: 391 ng
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



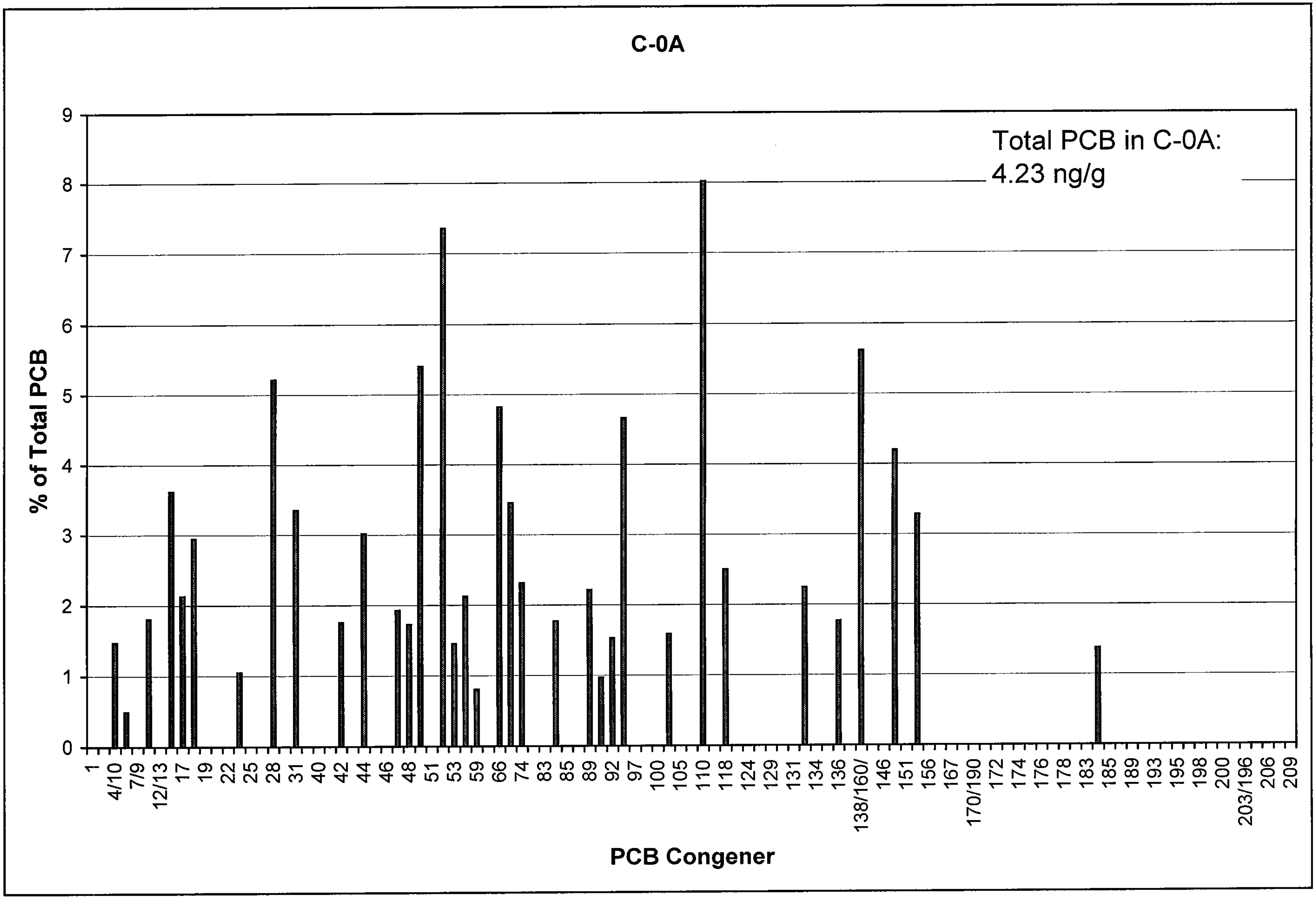
T-0 Empore
% of Total PCB
0
5
10
15
20
25
30
35
40
Total PCB in
T-0 empore:
1,391 ng
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener



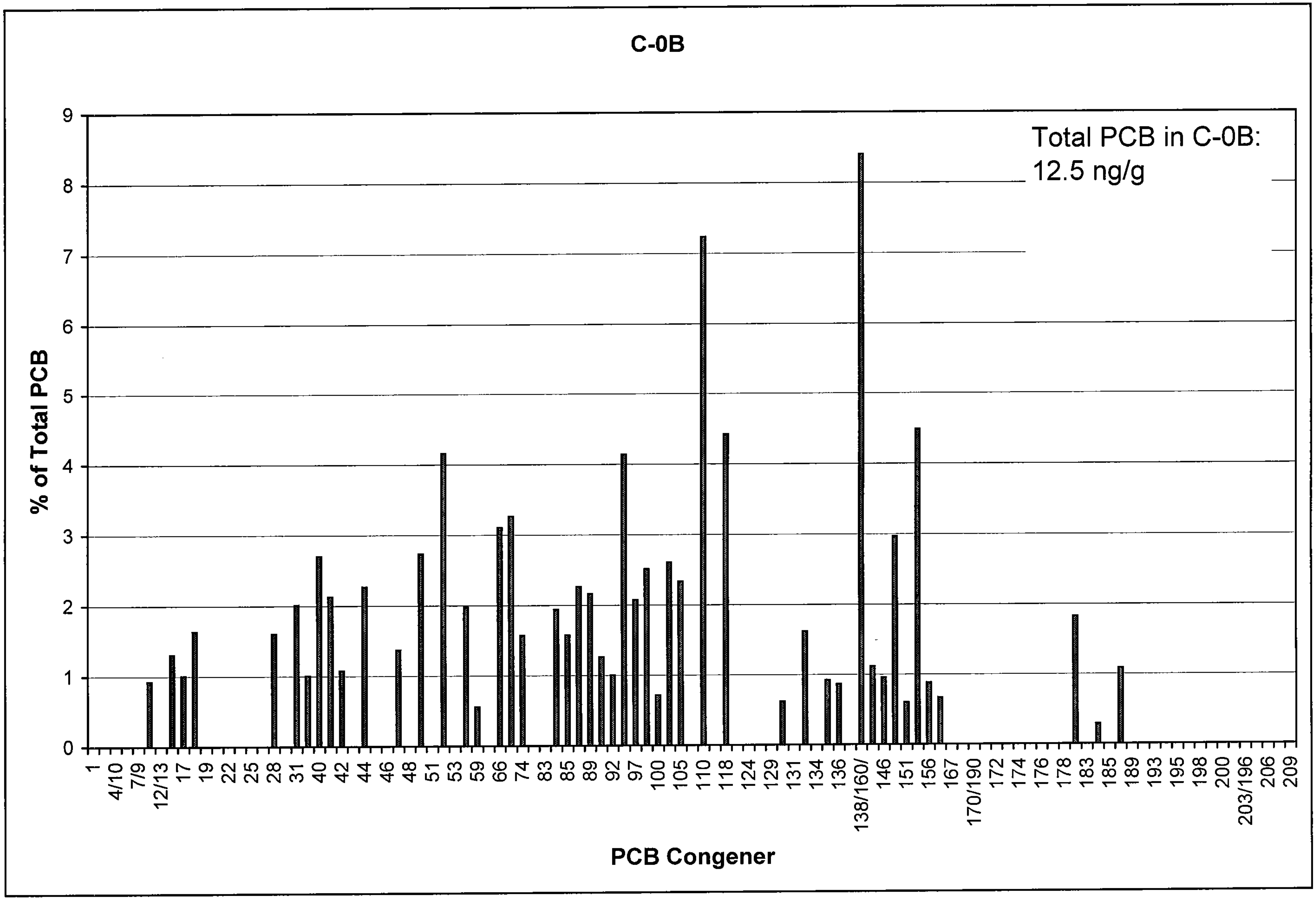
T-L Empore
Total PCB in
T-L empore:
824 ng
% of Total PCB
35
30
25
20
15
10
5
0
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

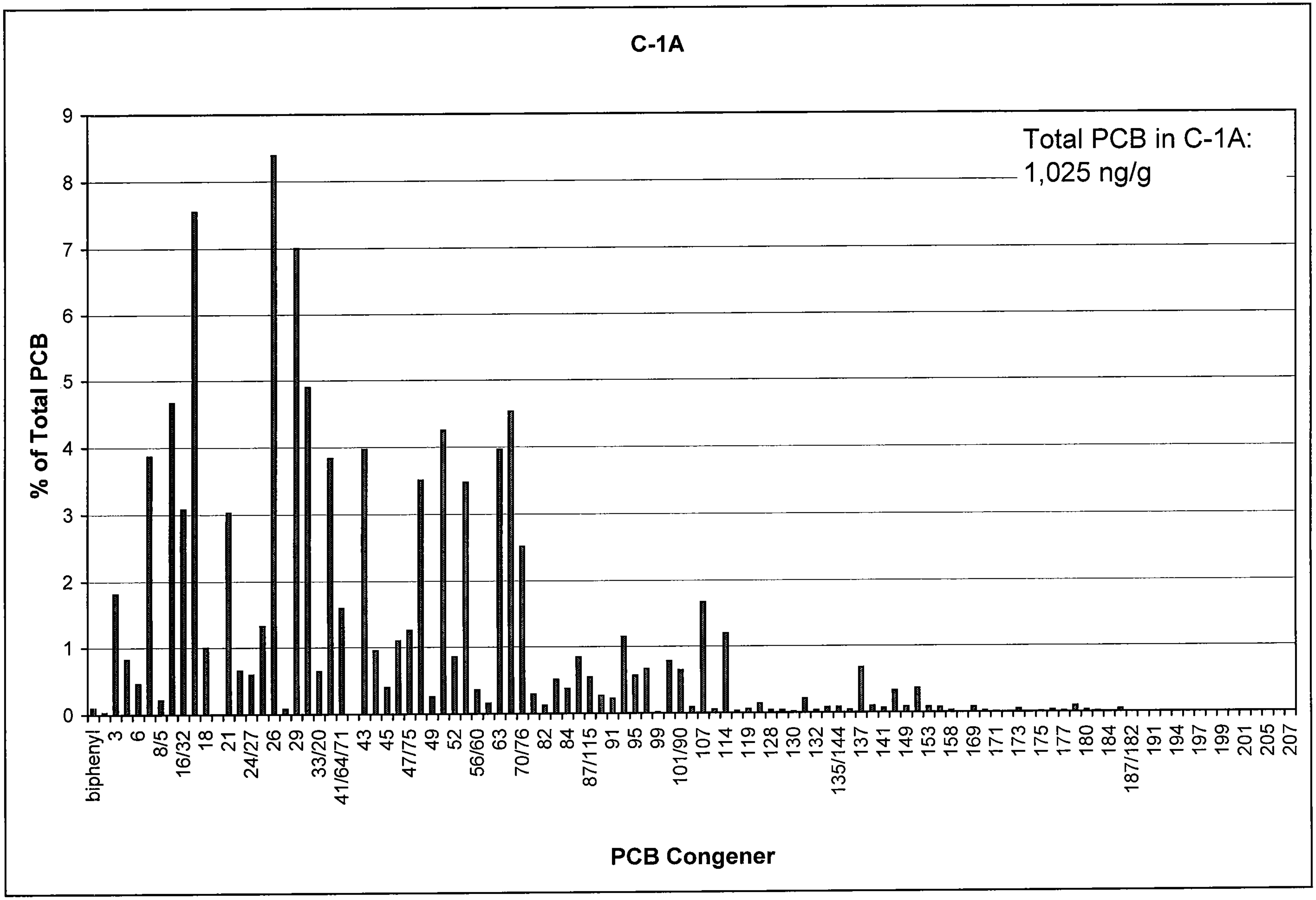


T-L Dup Empore
Total PCB in T-L dup empore: 970 ng
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
35
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

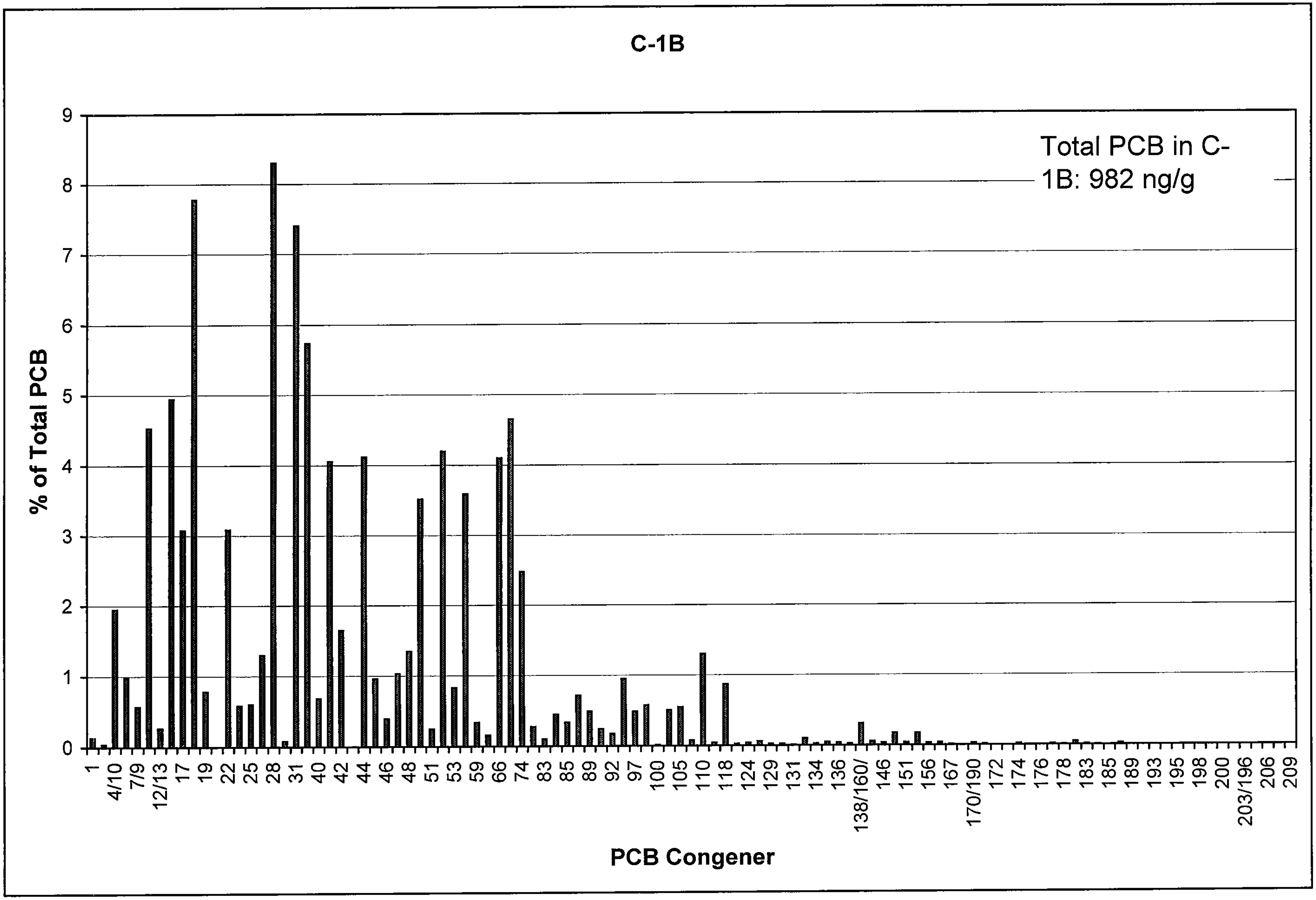


C-0A
Total PCB in C-0A:
4.23 ng/g
% of Total PCB
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

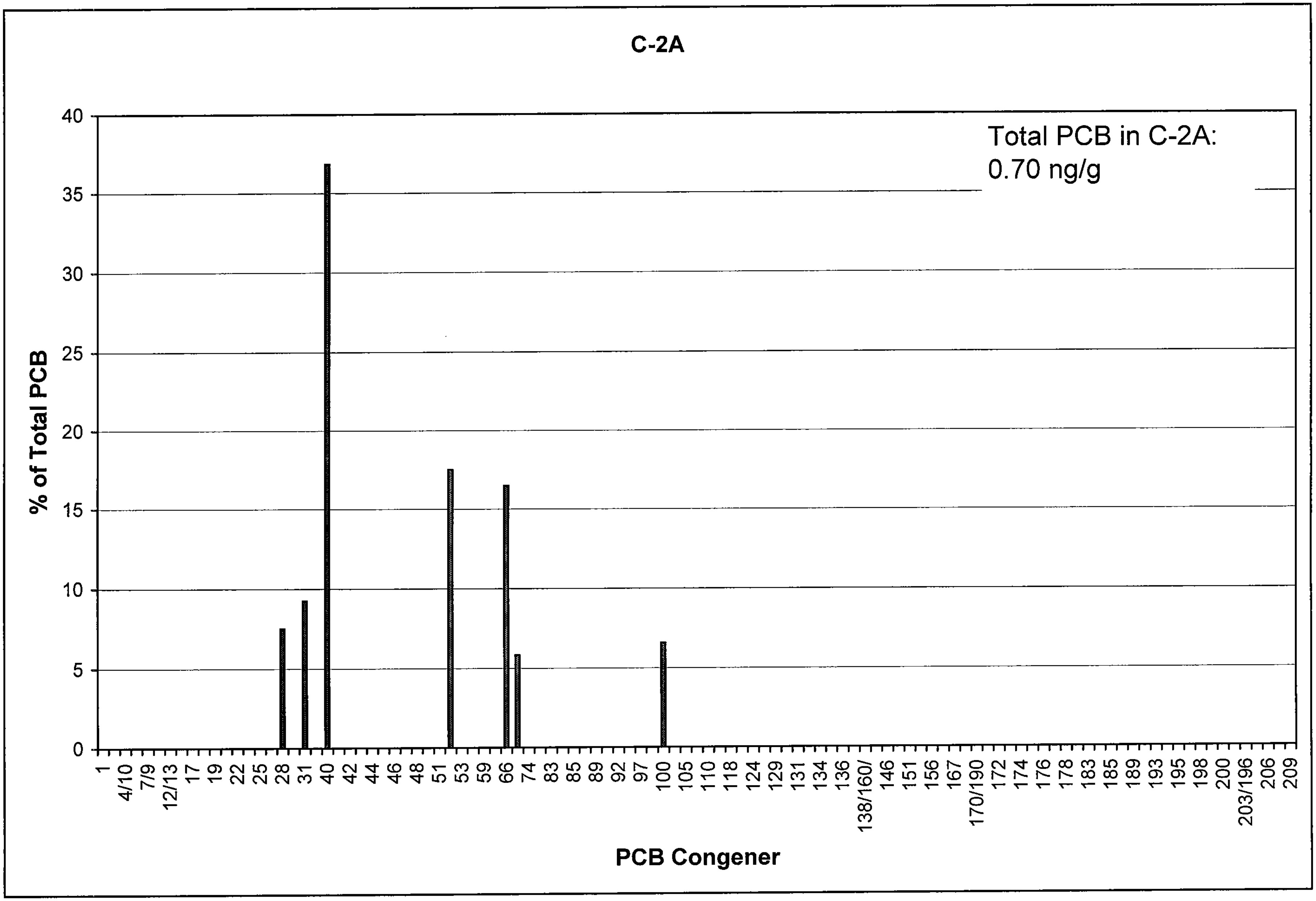

C-0B
Total PCB in C-0B:
12.5 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

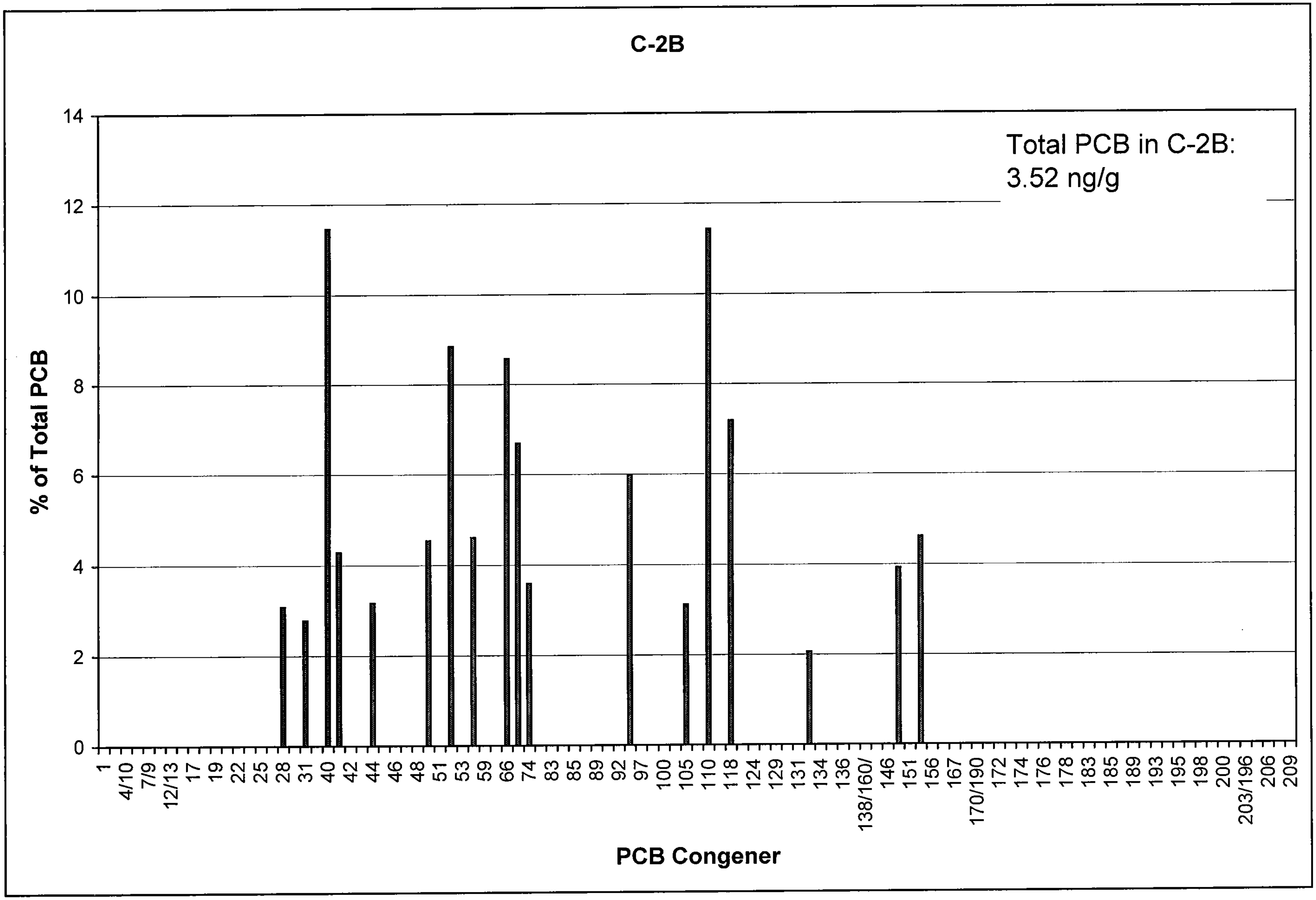


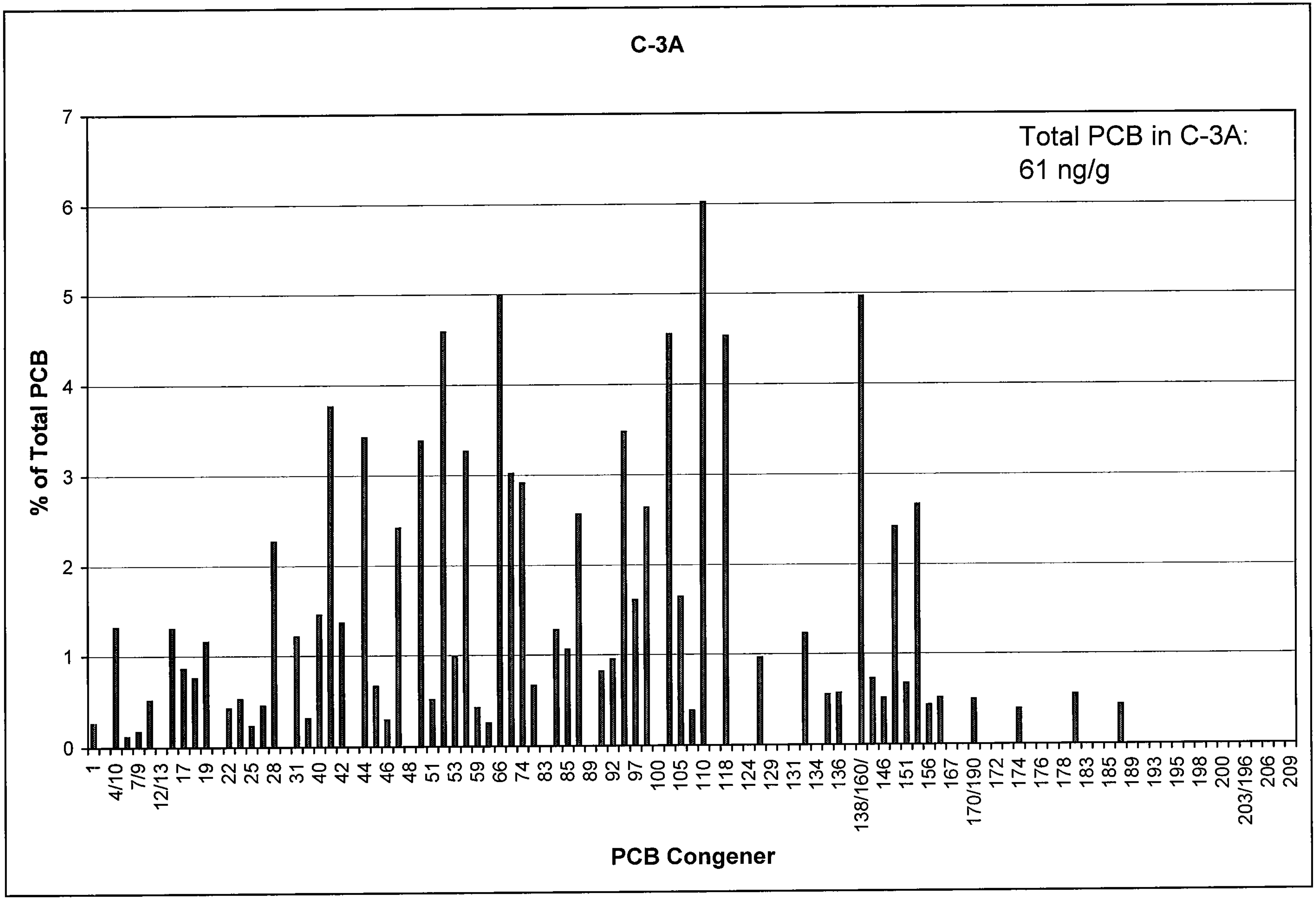
C-1A
Total PCB in C-1A:
1,025 ng/g
% of Total PCB
0
1
2
3
4
5
6
7
8
9
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener



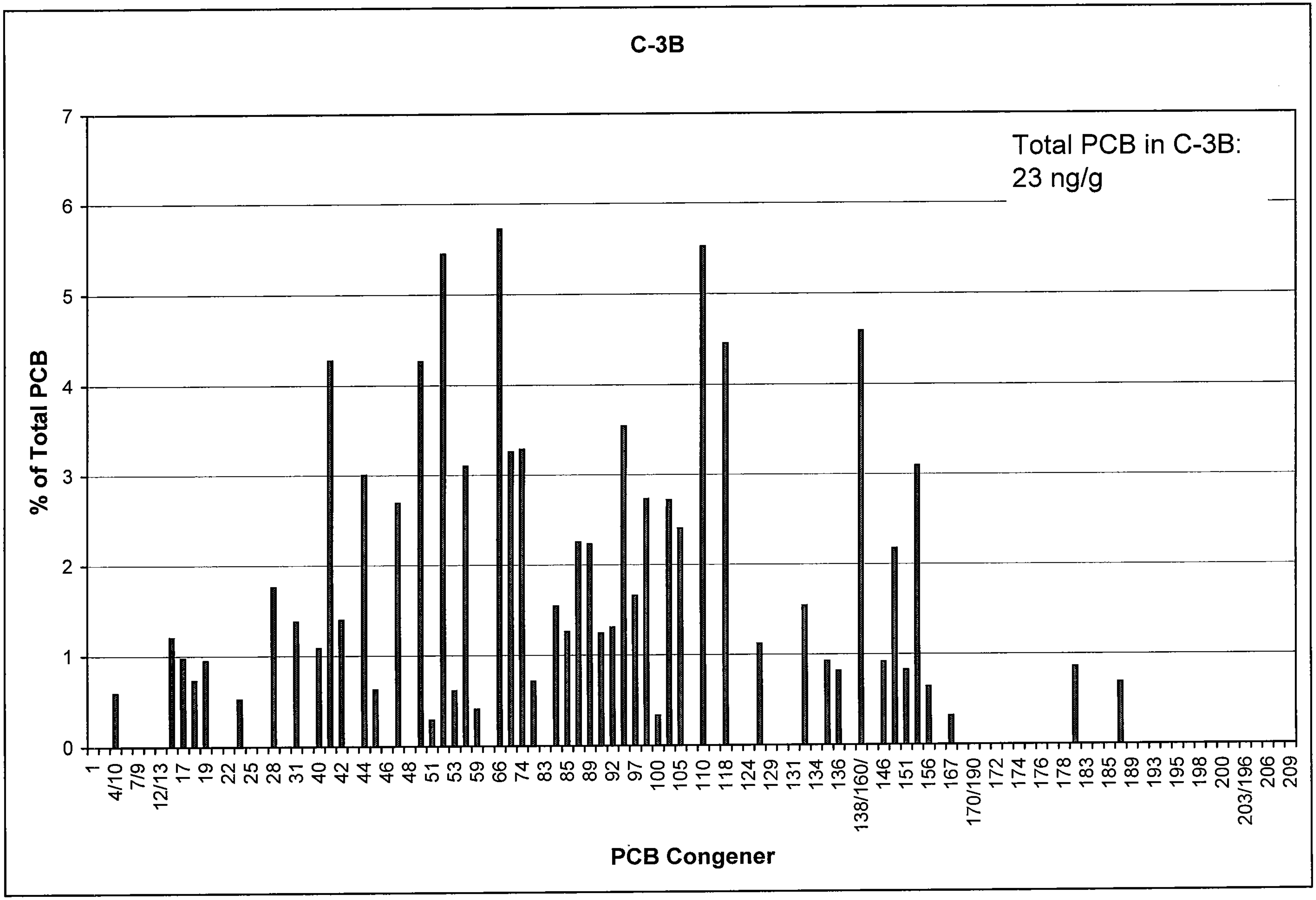
C-1B
Total PCB in C-1B: 982 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

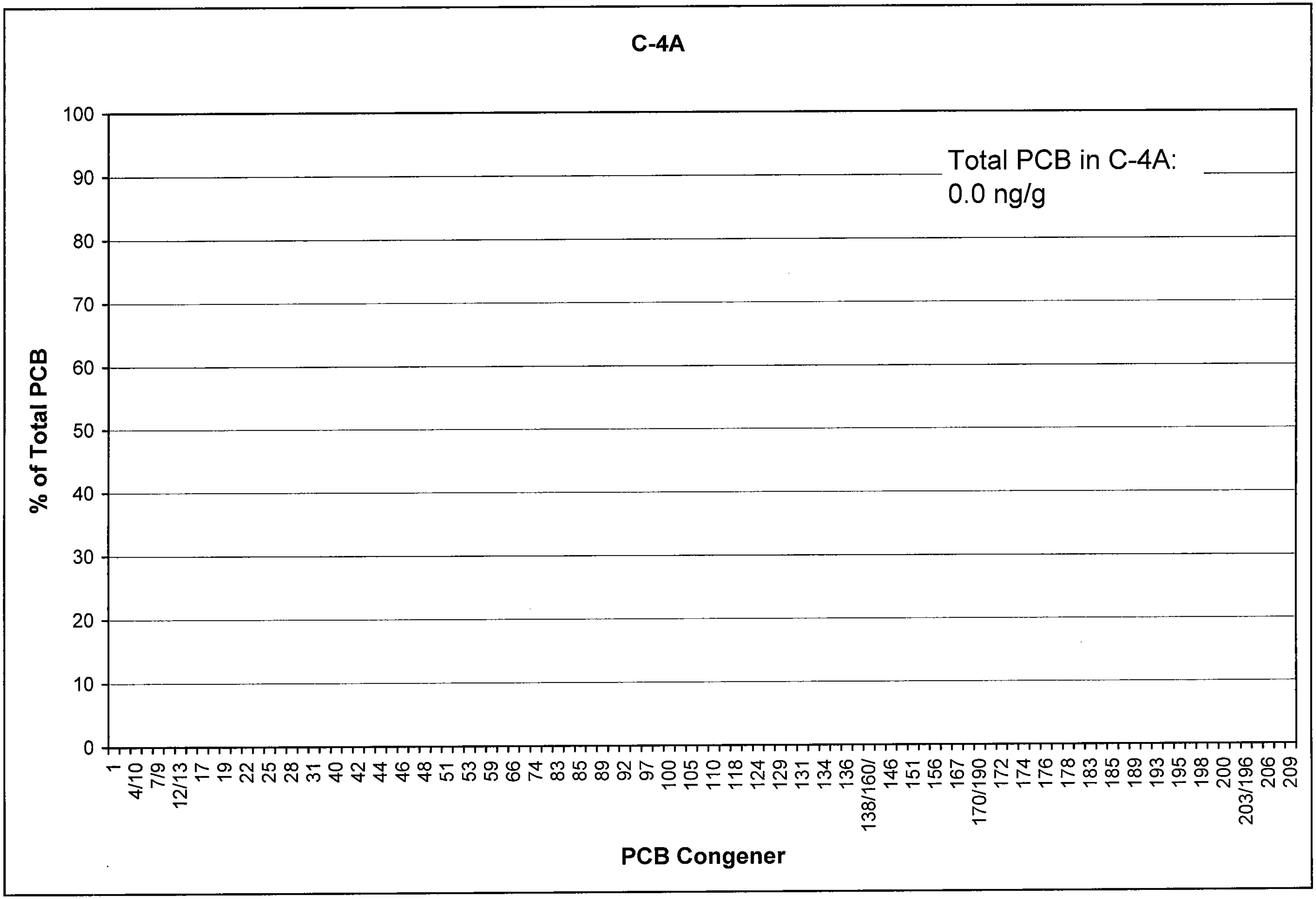

C-2A
Total PCB in C-2A:
0.70 ng/g
% of Total PCB
0
5
10
15
20
25
30
35
40
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

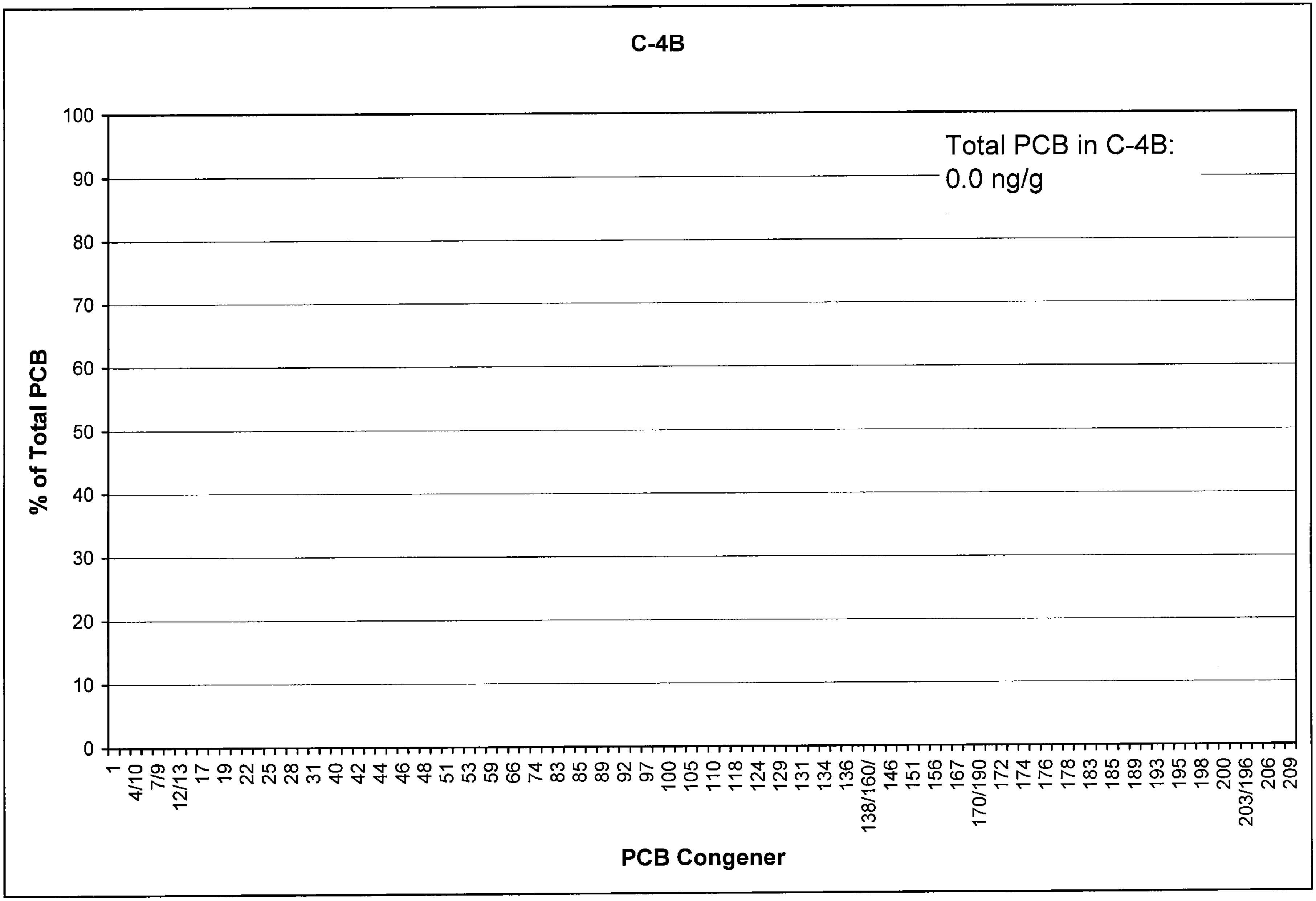

C-2B
Total PCB in C-2B:
3.52 ng/g
% of Total PCB
0
2
4
6
8
10
12
14
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

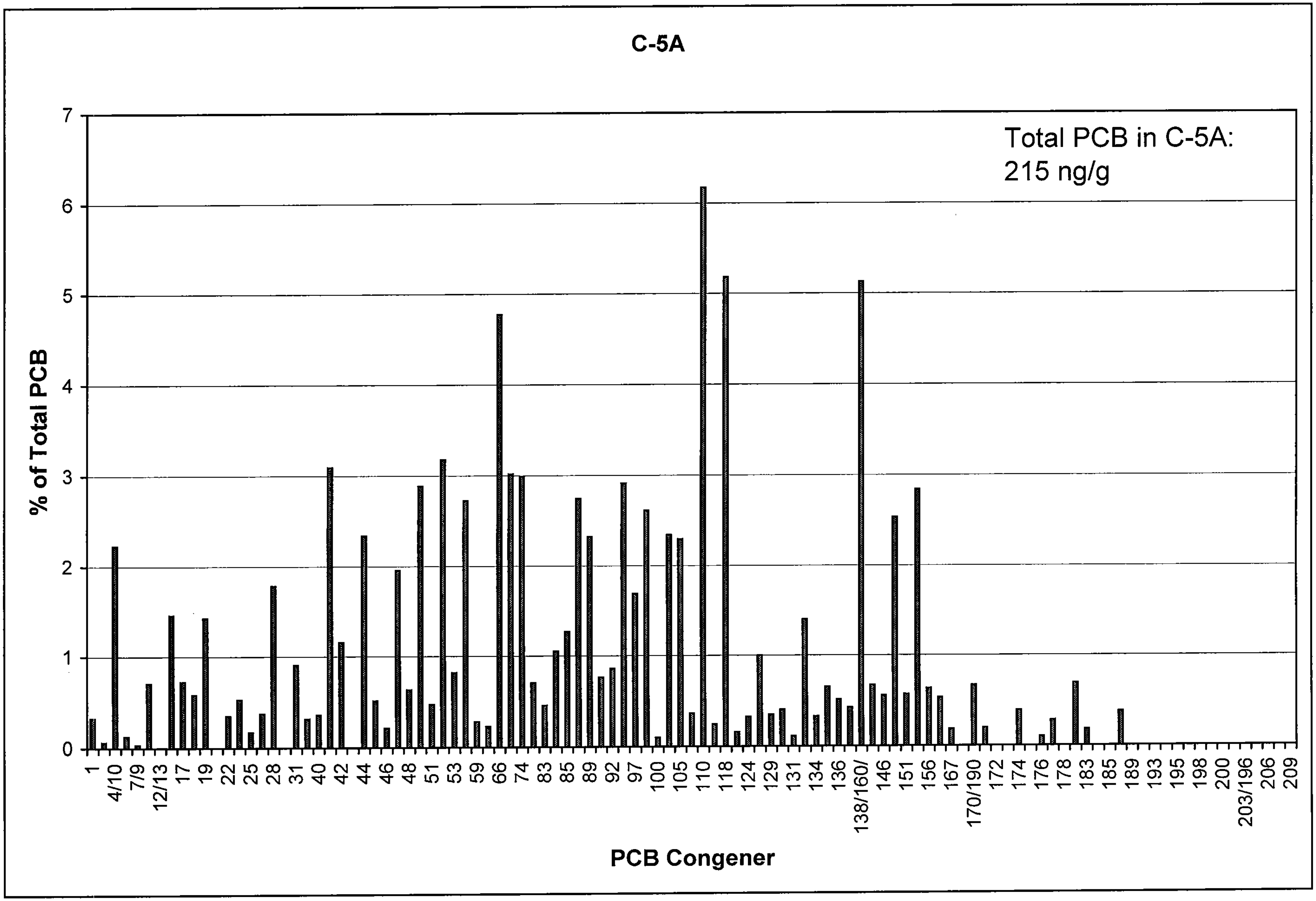


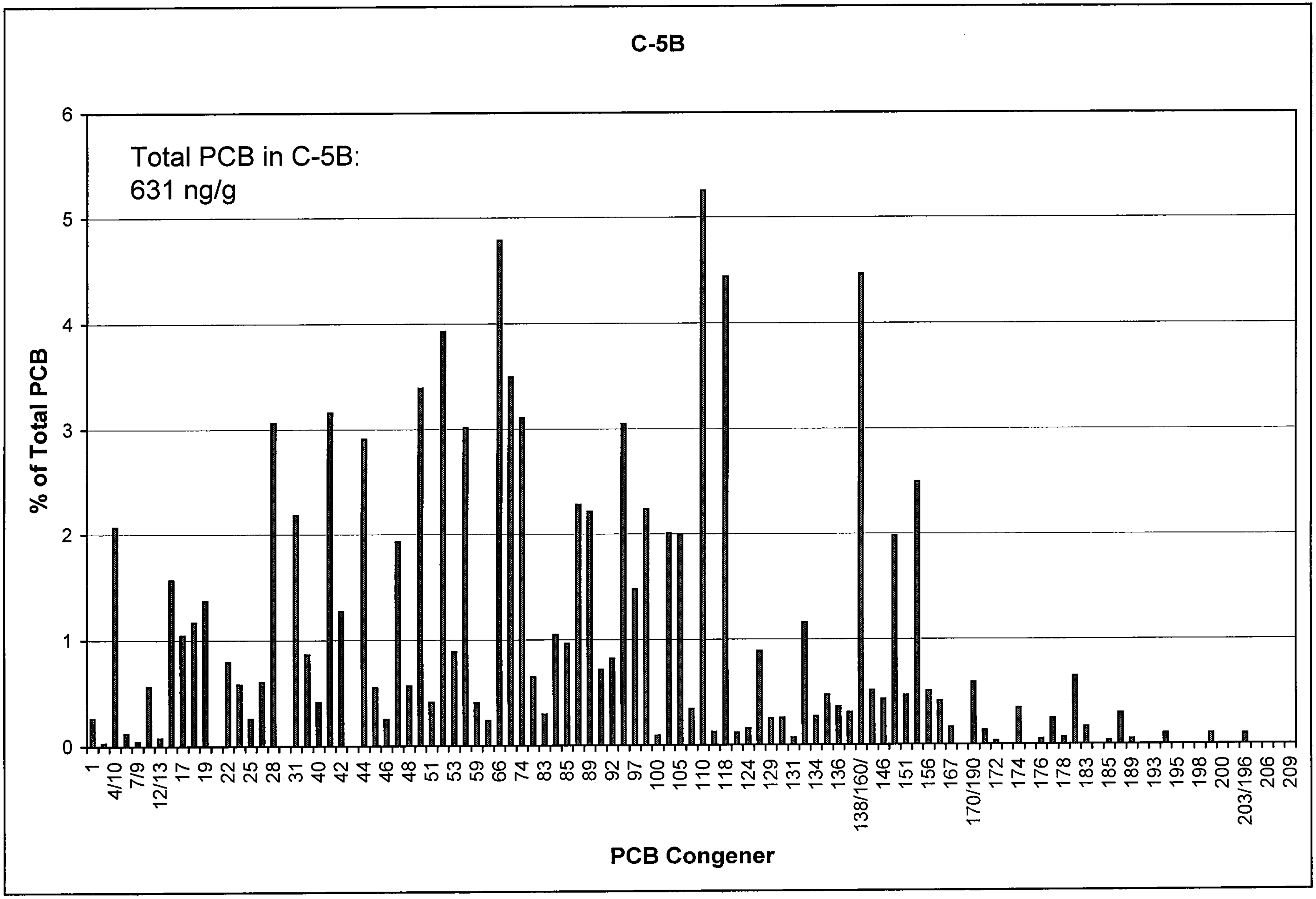
C-3A
Total PCB in C-3A:
61 ng/g
% of Total PCB
0
1
2
3
4
5
6
7
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

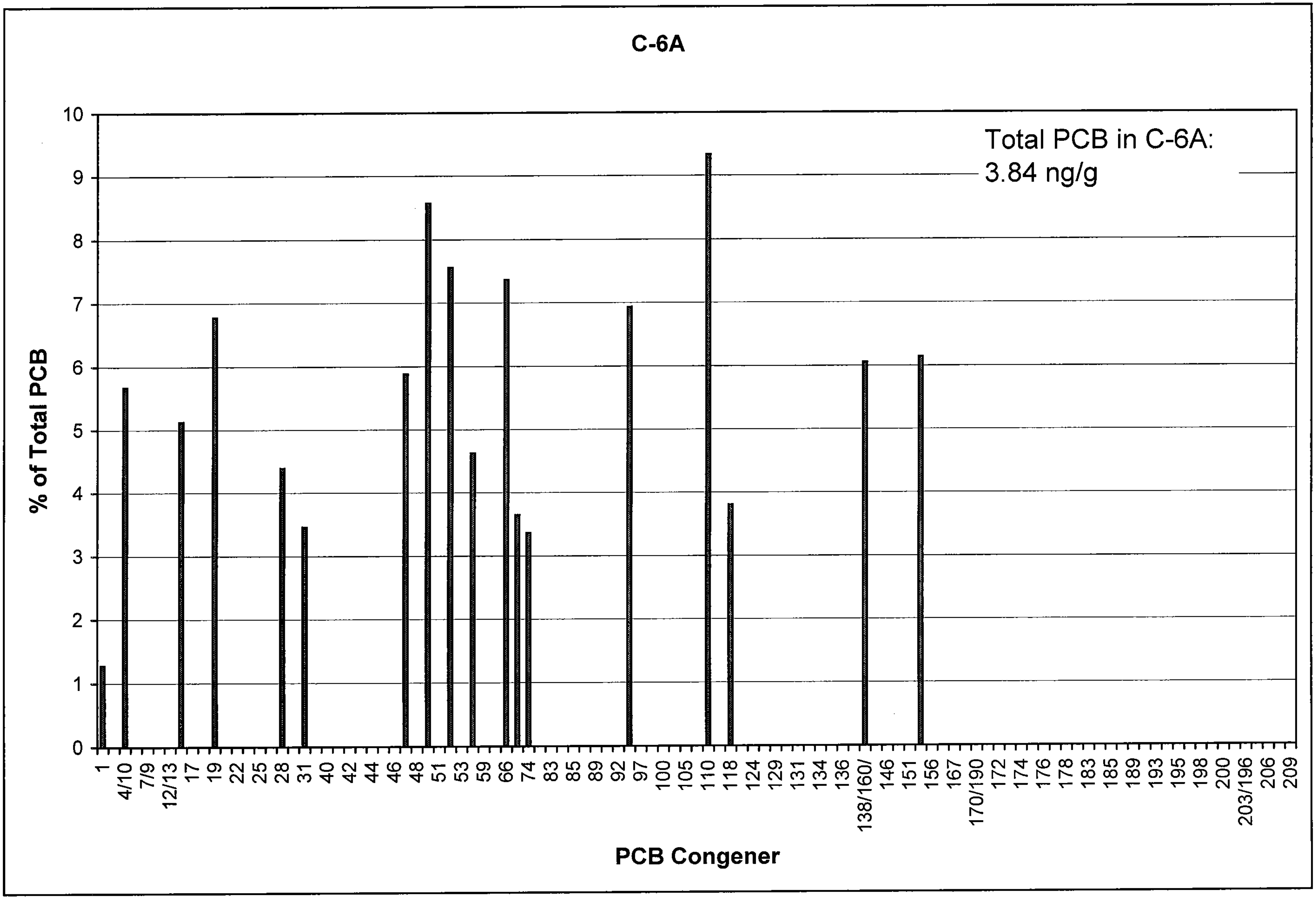

C-3B
Total PCB in C-3B:
23 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

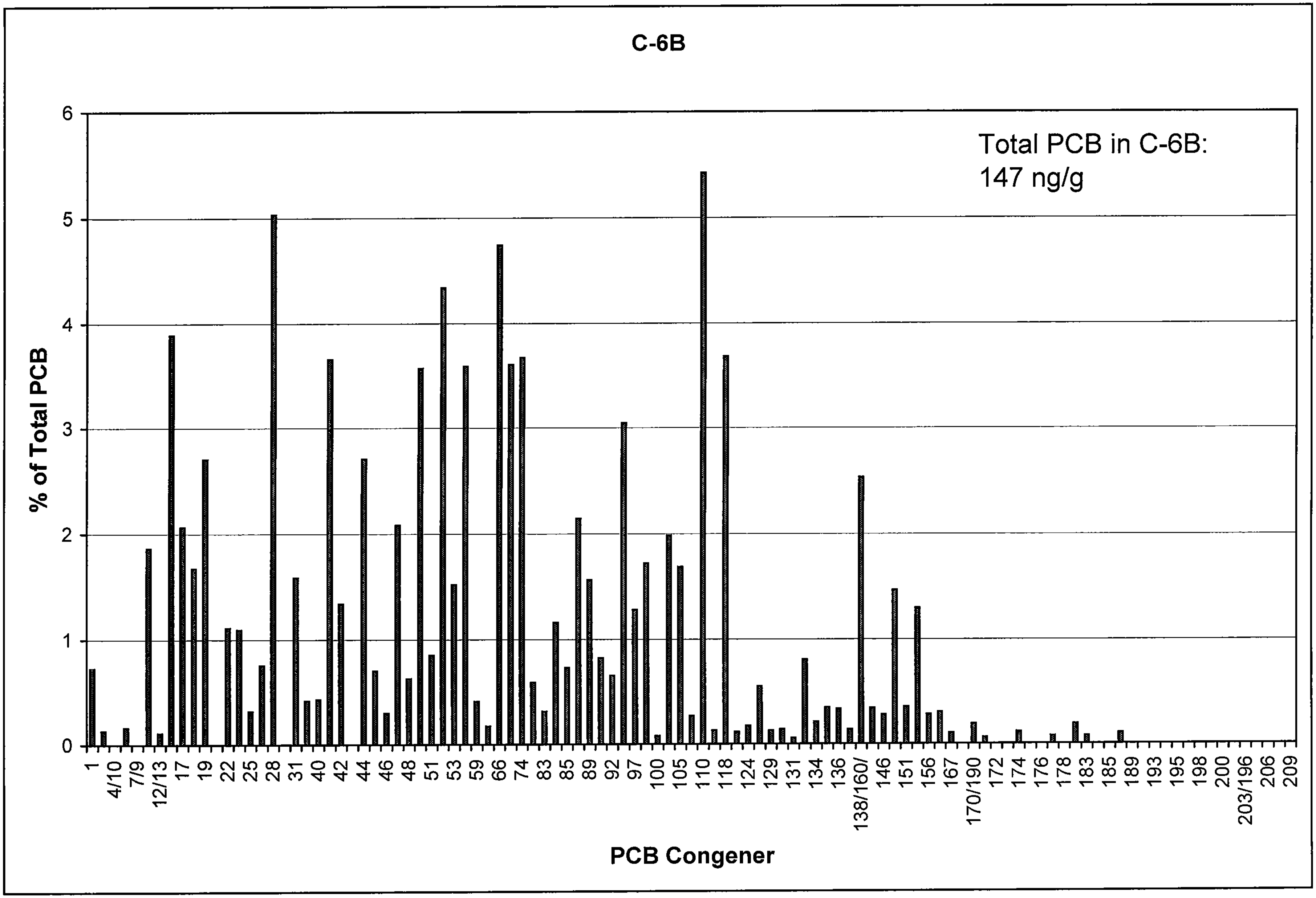

C-4A
Total PCB in C-4A: 0.0 ng/g
% of Total PCB
0
10
20
30
40
50
60
70
80
90
100
PCB Congener
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

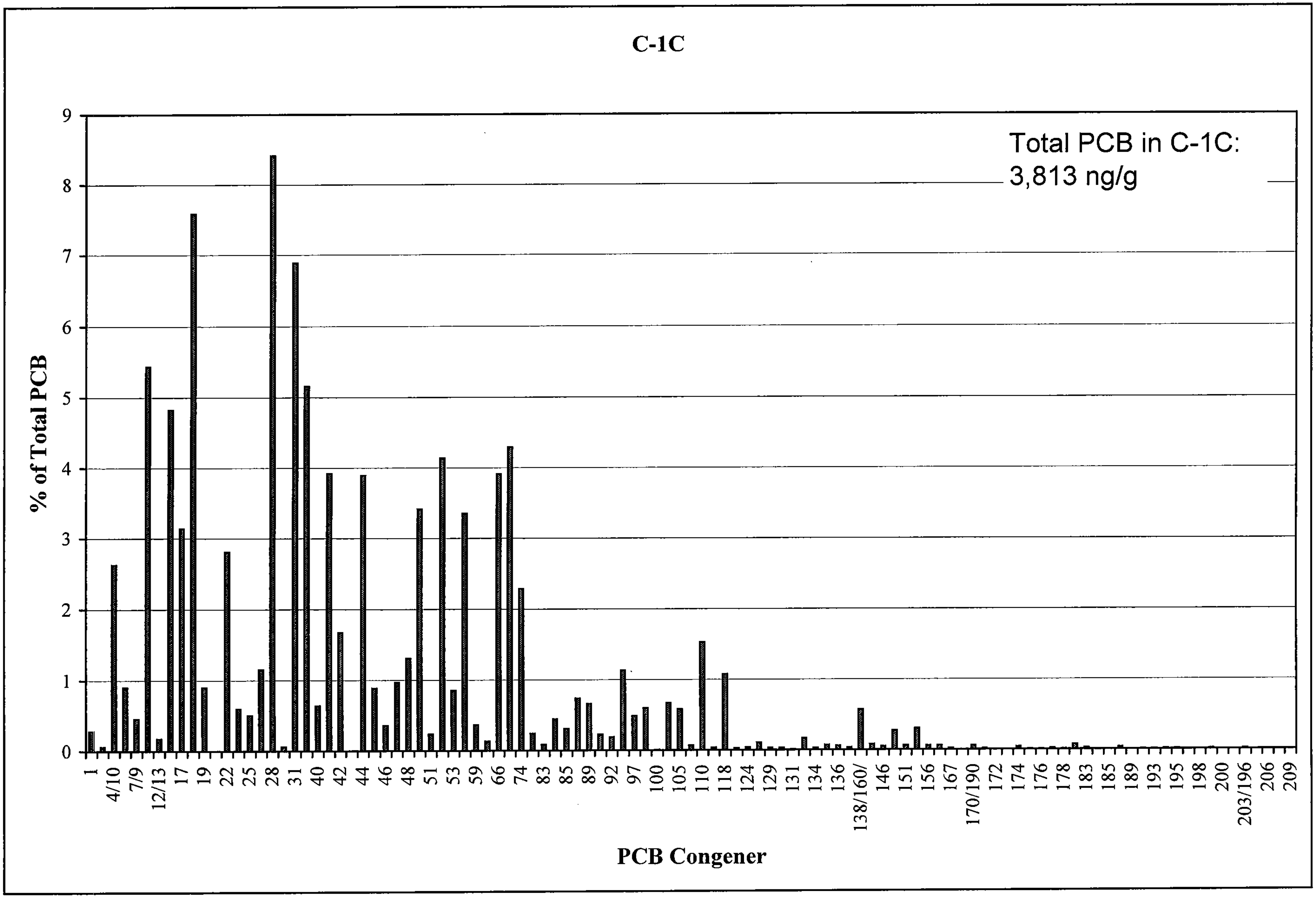

C-4B
Total PCB in C-4B:
0.0 ng/g
% of Total PCB
PCB Congener
0
10
20
30
40
50
60
70
80
90
100
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

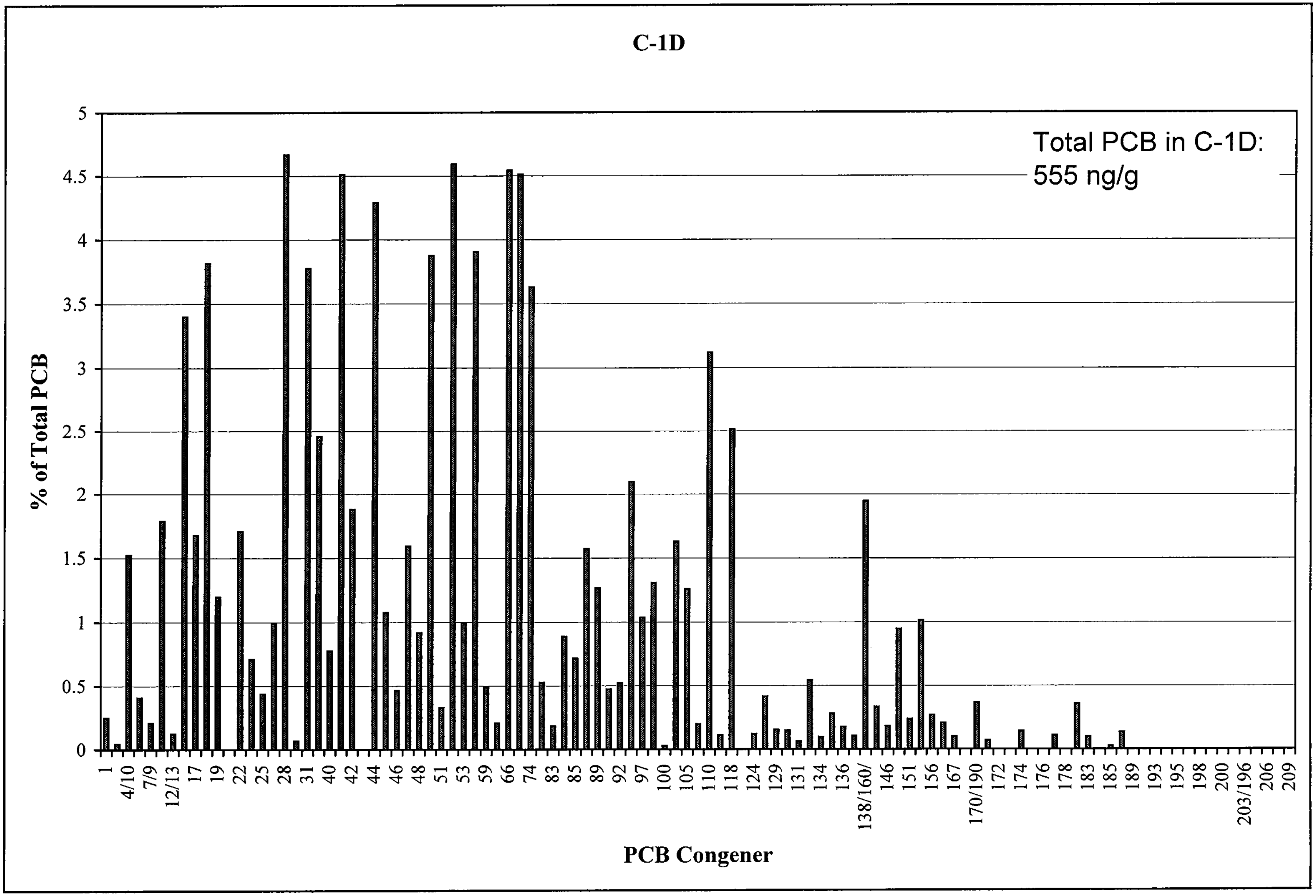

C-5A
Total PCB in C-5A:
215 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

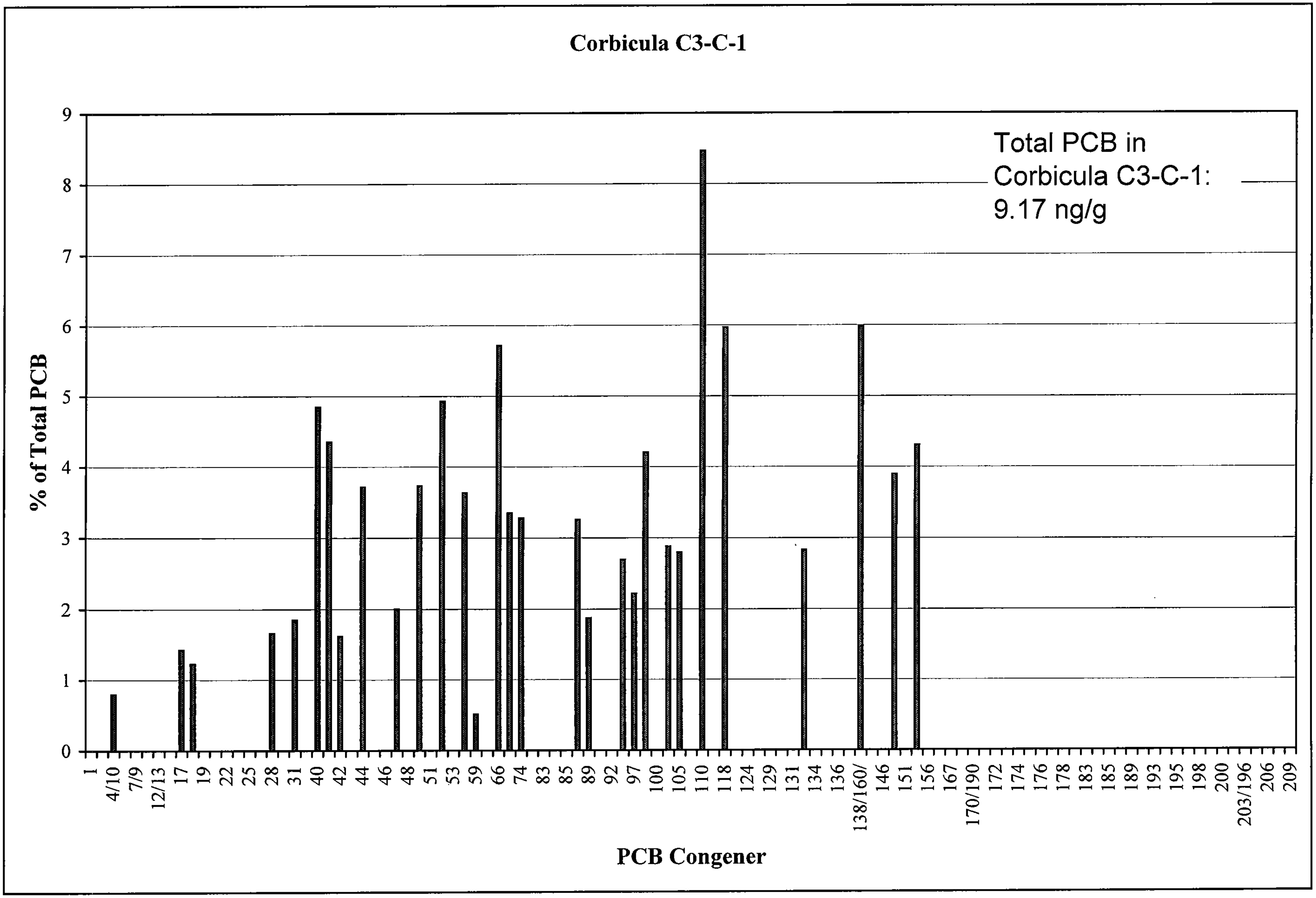

C-5B
Total PCB in C-5B:
631 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209


C-6A
Total PCB in C-6A:
3.84 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
10
1 4/10 7/9 12/13 17 19 22 25 28 31 40 42 44 46 48 51 53 59 66 74 83 85 89 92 97 100 105 110 118 124 129 131 134 136 138/160/ 146 151 156 167 170/190 172 174 176 178 183 185 189 193 195 198 200 203/196 206 209

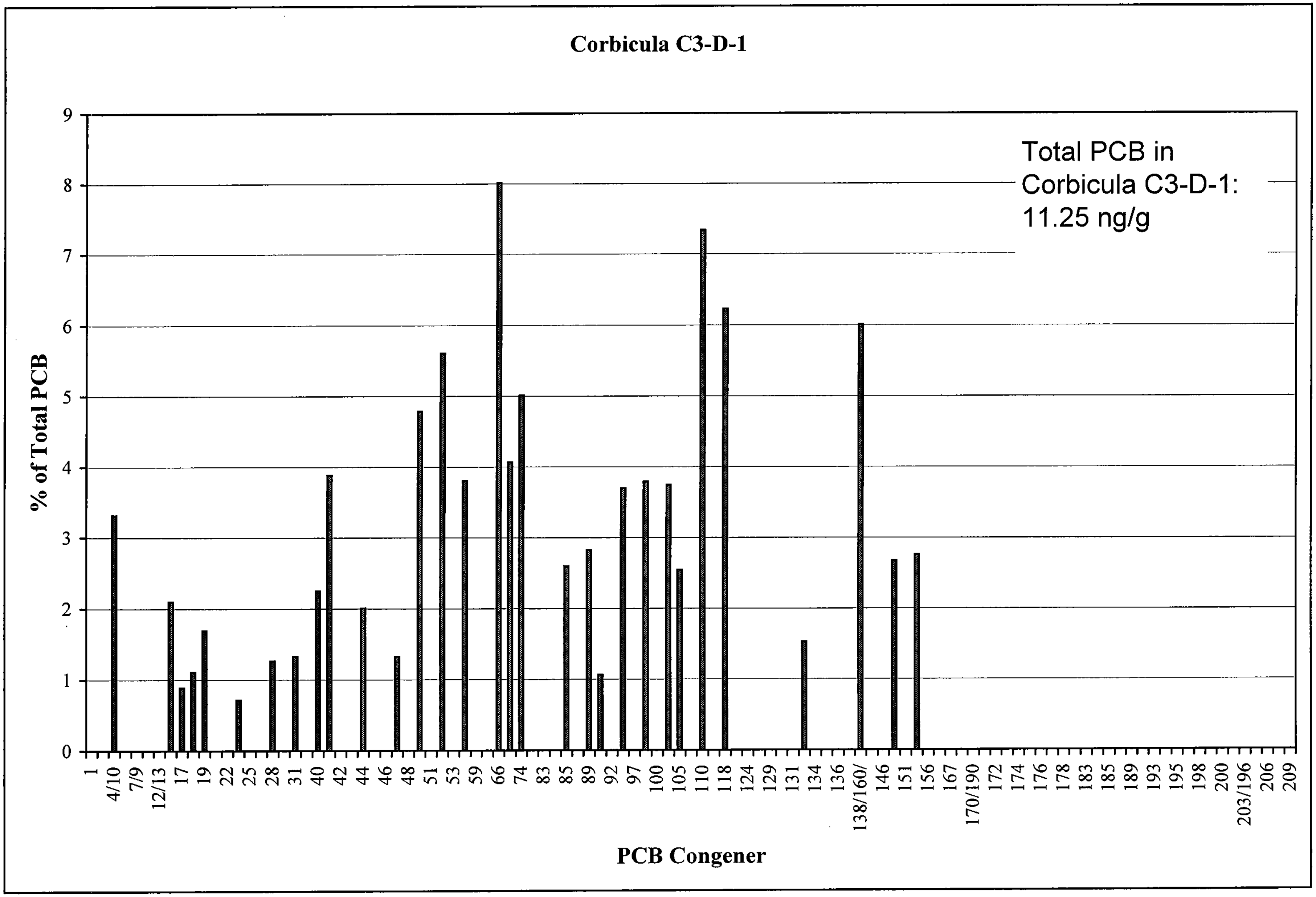

C-6B
Total PCB in C-6B:
147 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

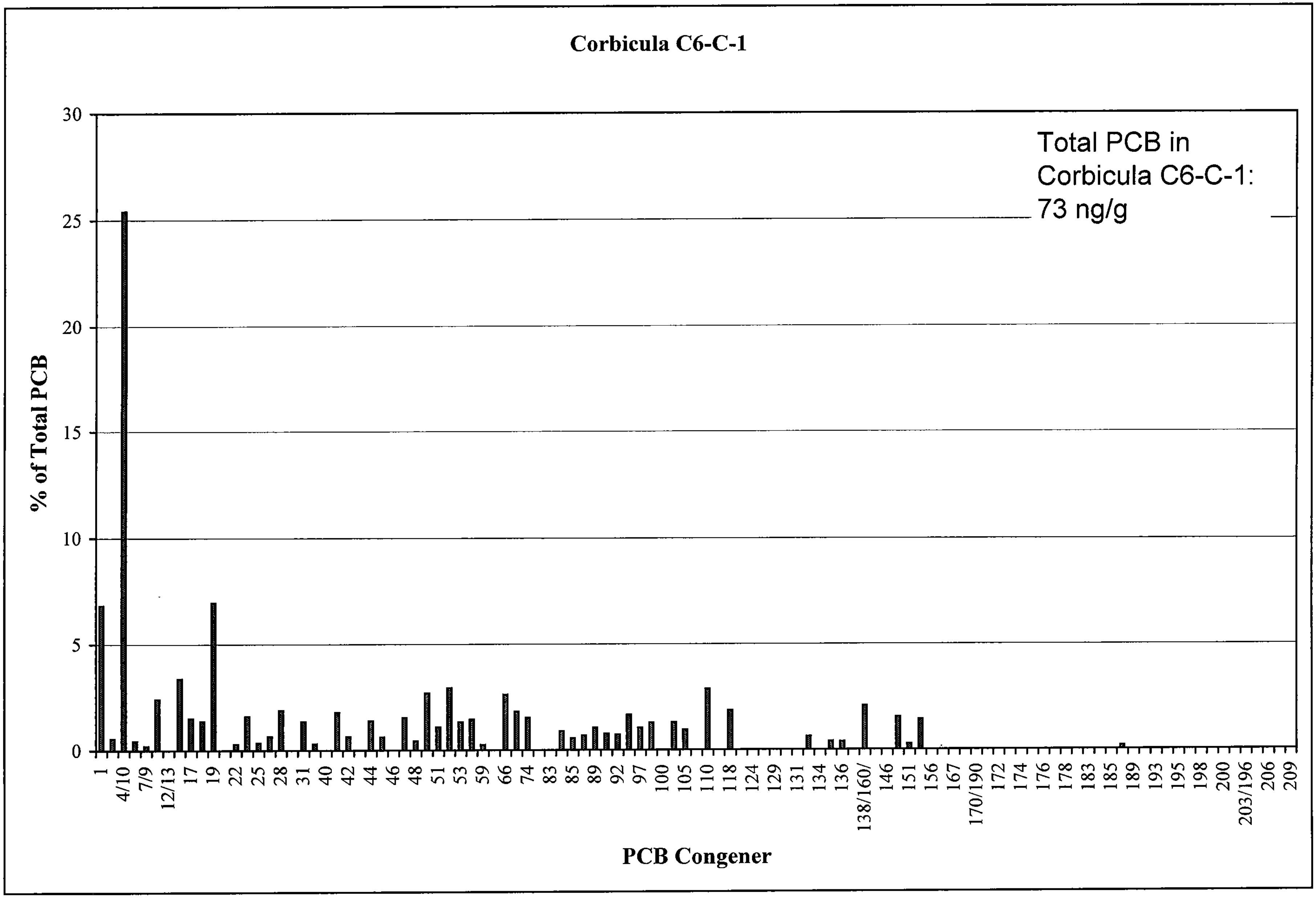

C-1C
Total PCB in C-1C:
3,813 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209


C-1D
Total PCB in C-1D: 555 ng/g
% of Total PCB
PCB Congener
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



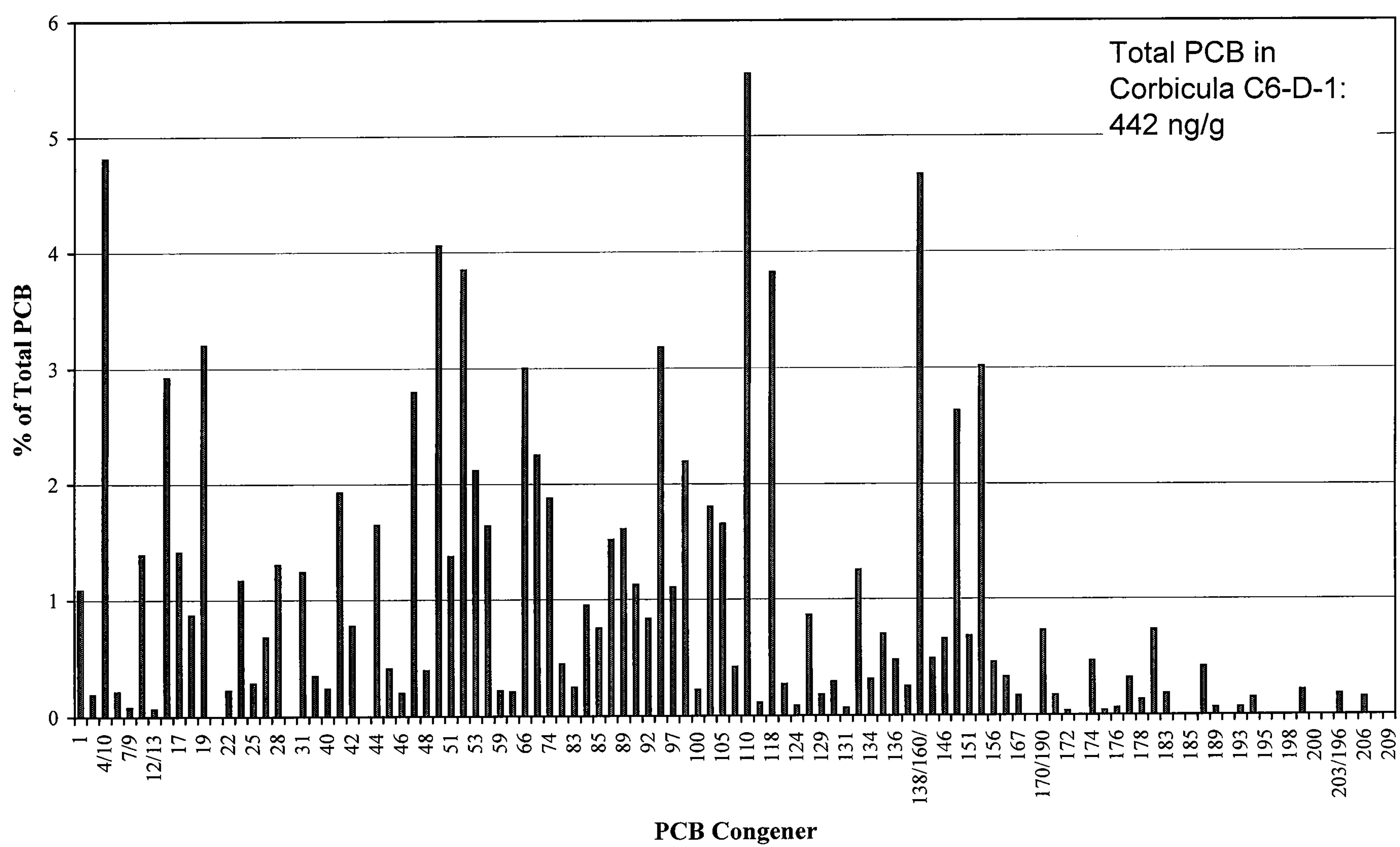
Corbicula C3-C-1
Total PCB in Corbicula C3-C-1: 9.17 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

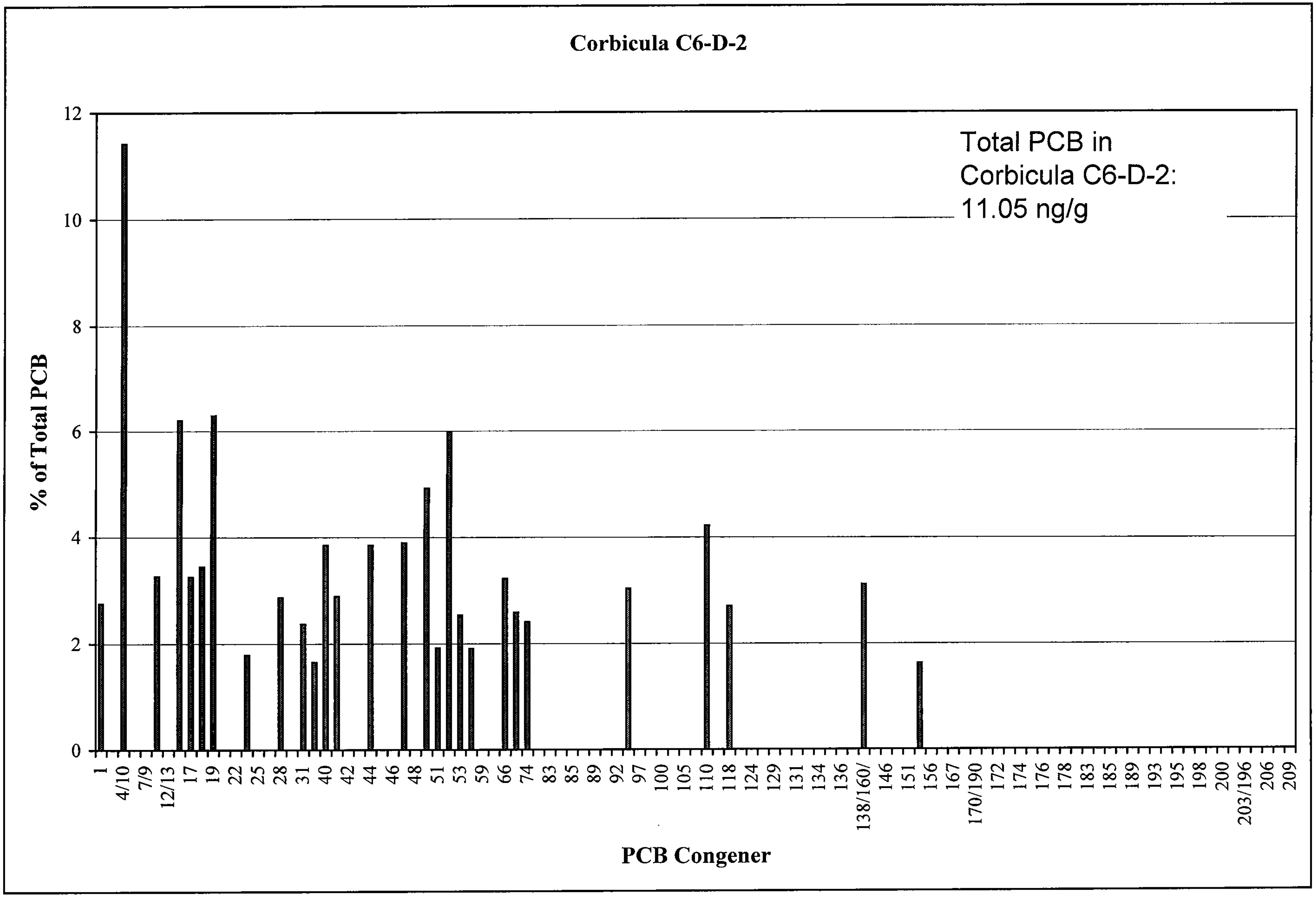

Corbicula C3-D-1
Total PCB in Corbicula C3-D-1: 11.25 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



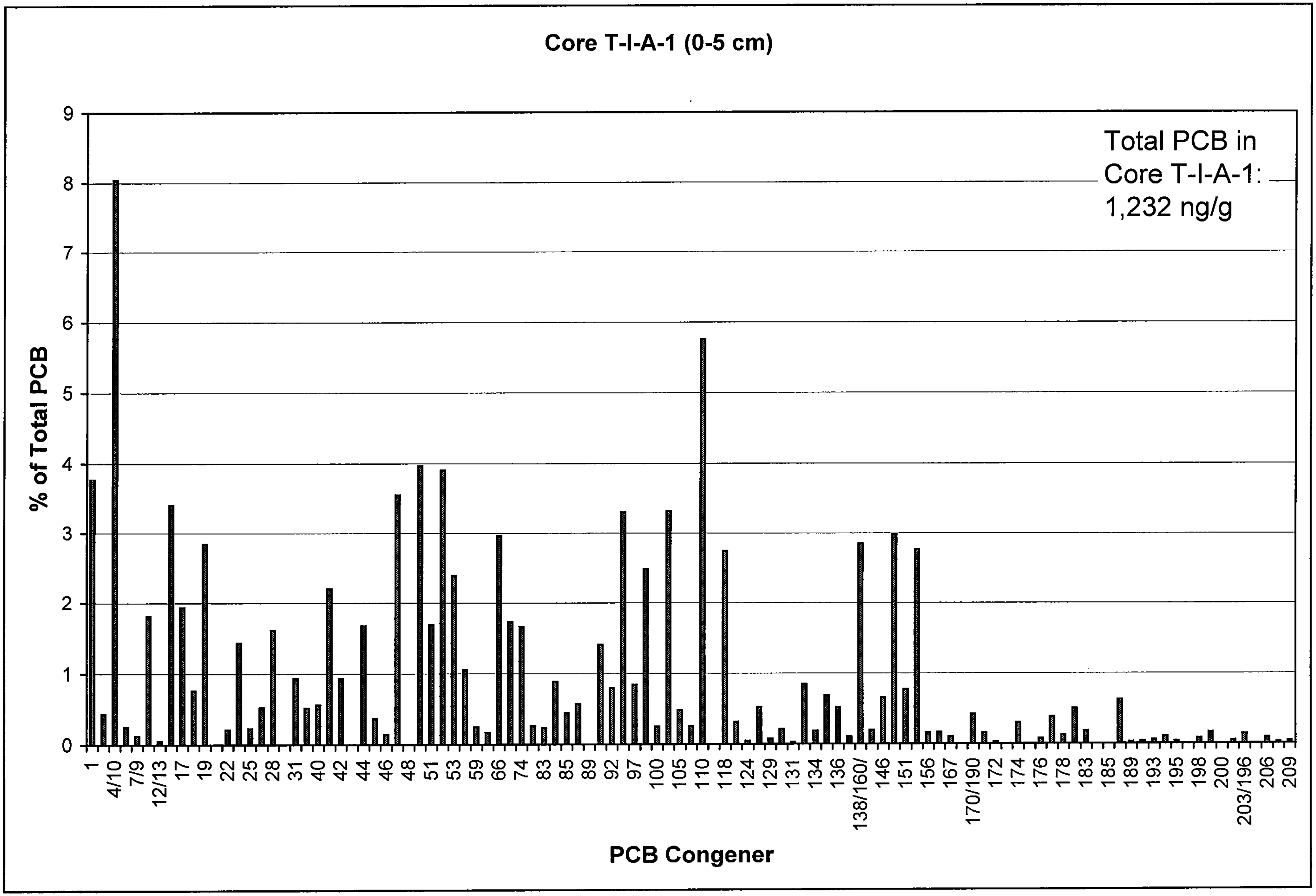
Corbicula C6-C-1
Total PCB in Corbicula C6-C-1: 73 ng/g
% of Total PCB
0
5
10
15
20
25
30
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

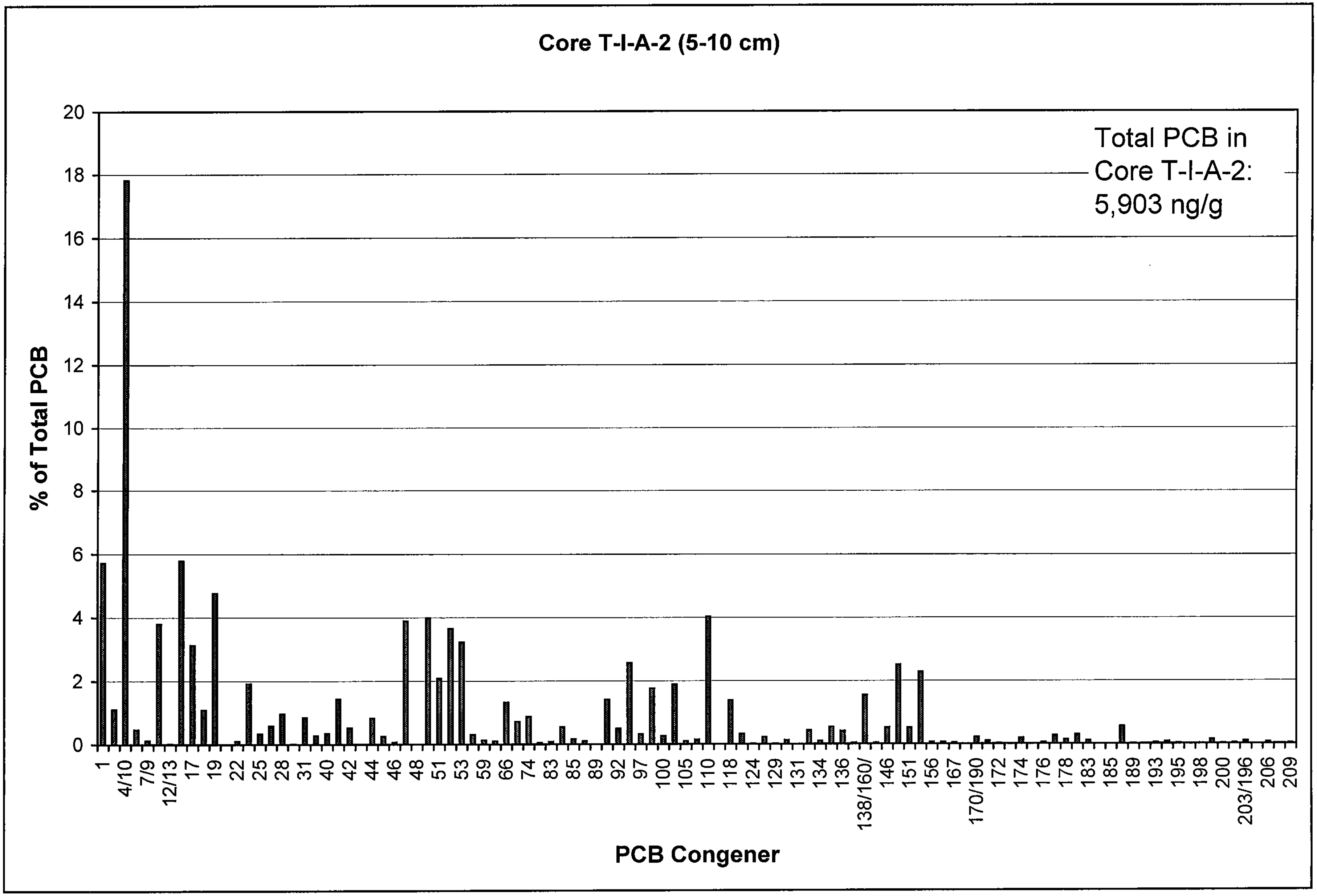
Corbicula C6-D-1



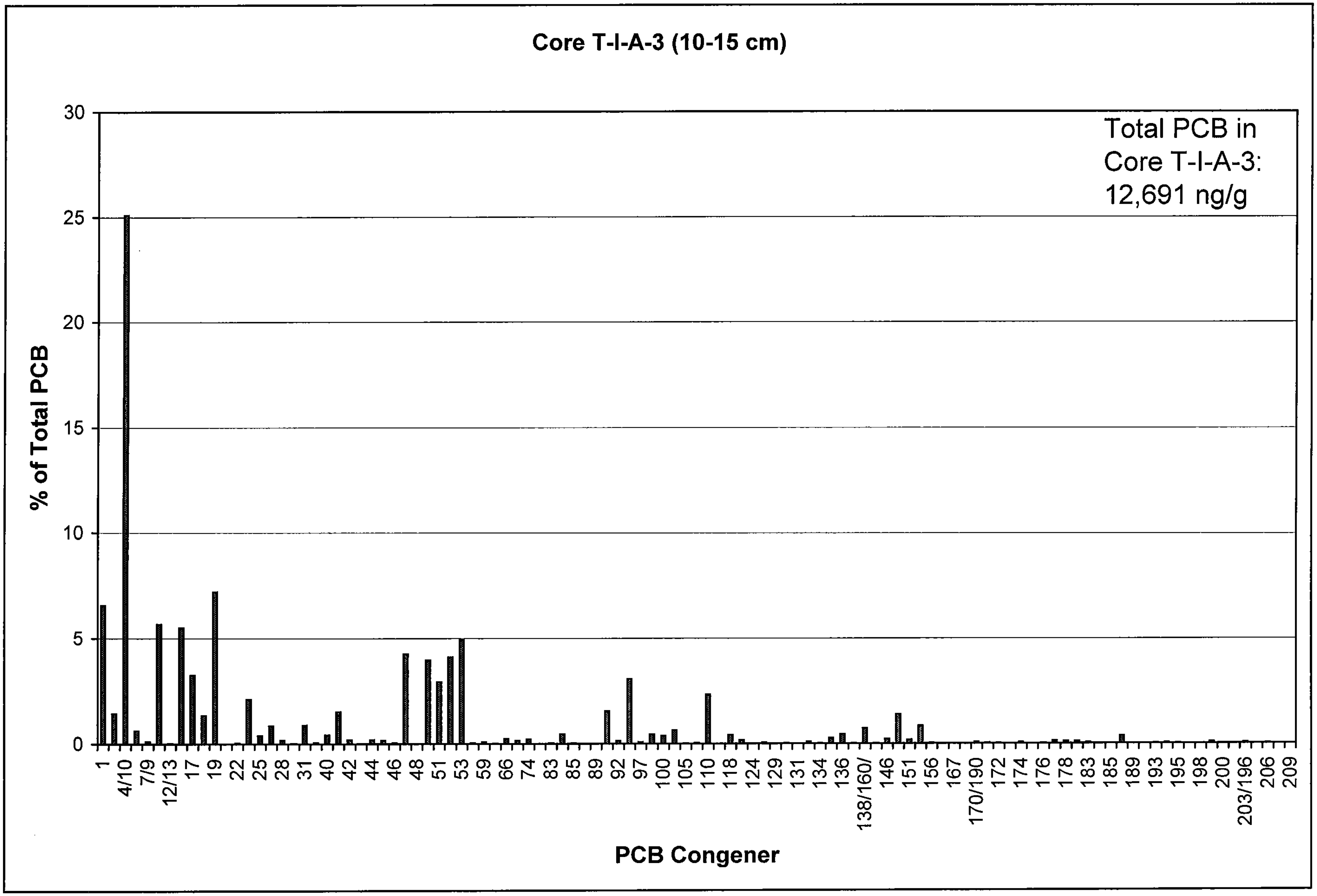


Corbicula C6-D-2
Total PCB in Corbicula C6-D-2: 11.05 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

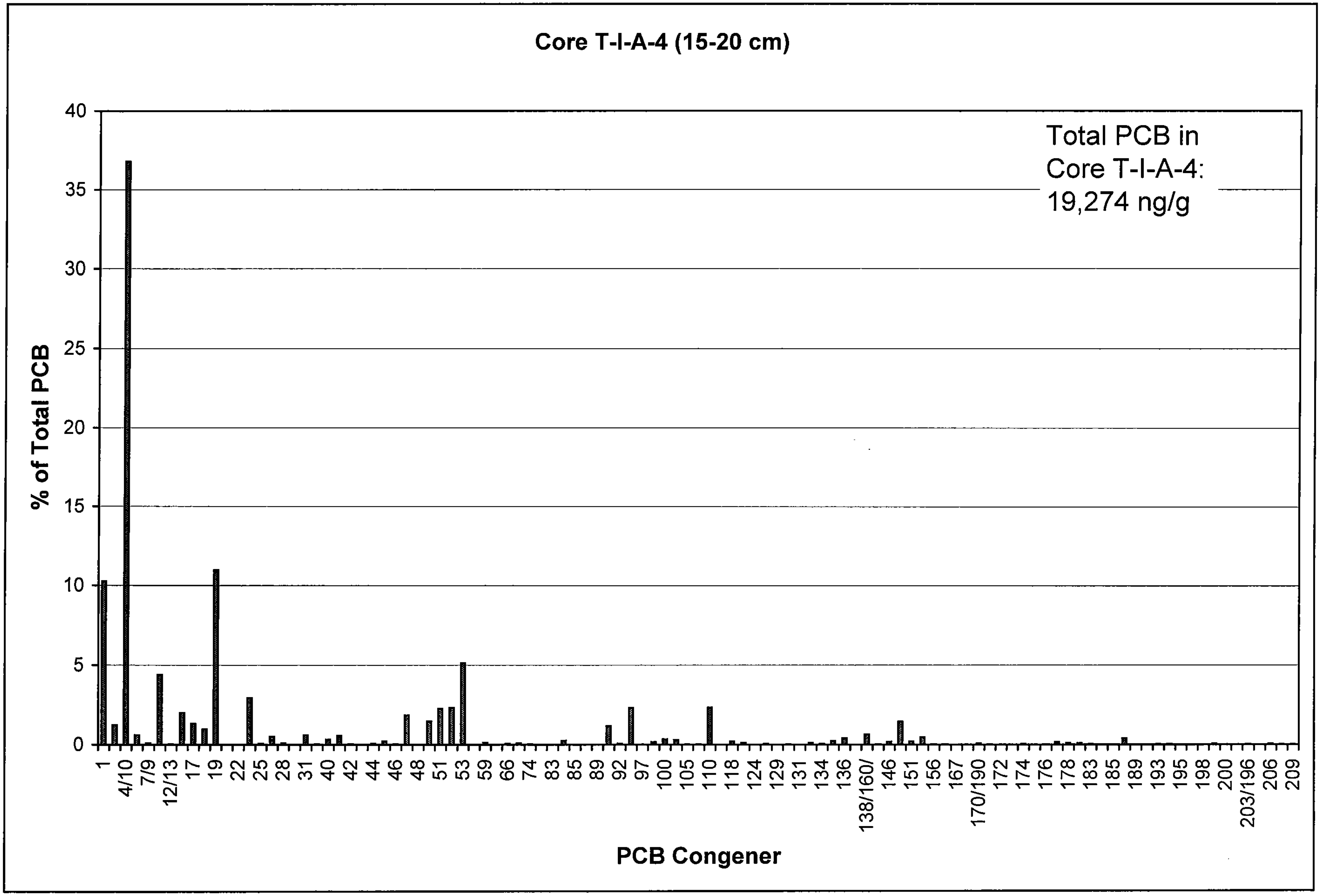

Core T-I-A-1 (0-5 cm)
Total PCB in Core T-I-A-1: 1,232 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



Core T-I-A-2 (5-10 cm)
Total PCB in Core T-I-A-2: 5,903 ng/g
% of Total PCB
0
2
4
6
8
10
12
14
16
18
20
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener



Core T-I-A-3 (10-15 cm)
Total PCB in Core T-I-A-3: 12,691 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



Core T-I-A-4 (15-20 cm)
Total PCB in
Core T-I-A-4:
19,274 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
35
40
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
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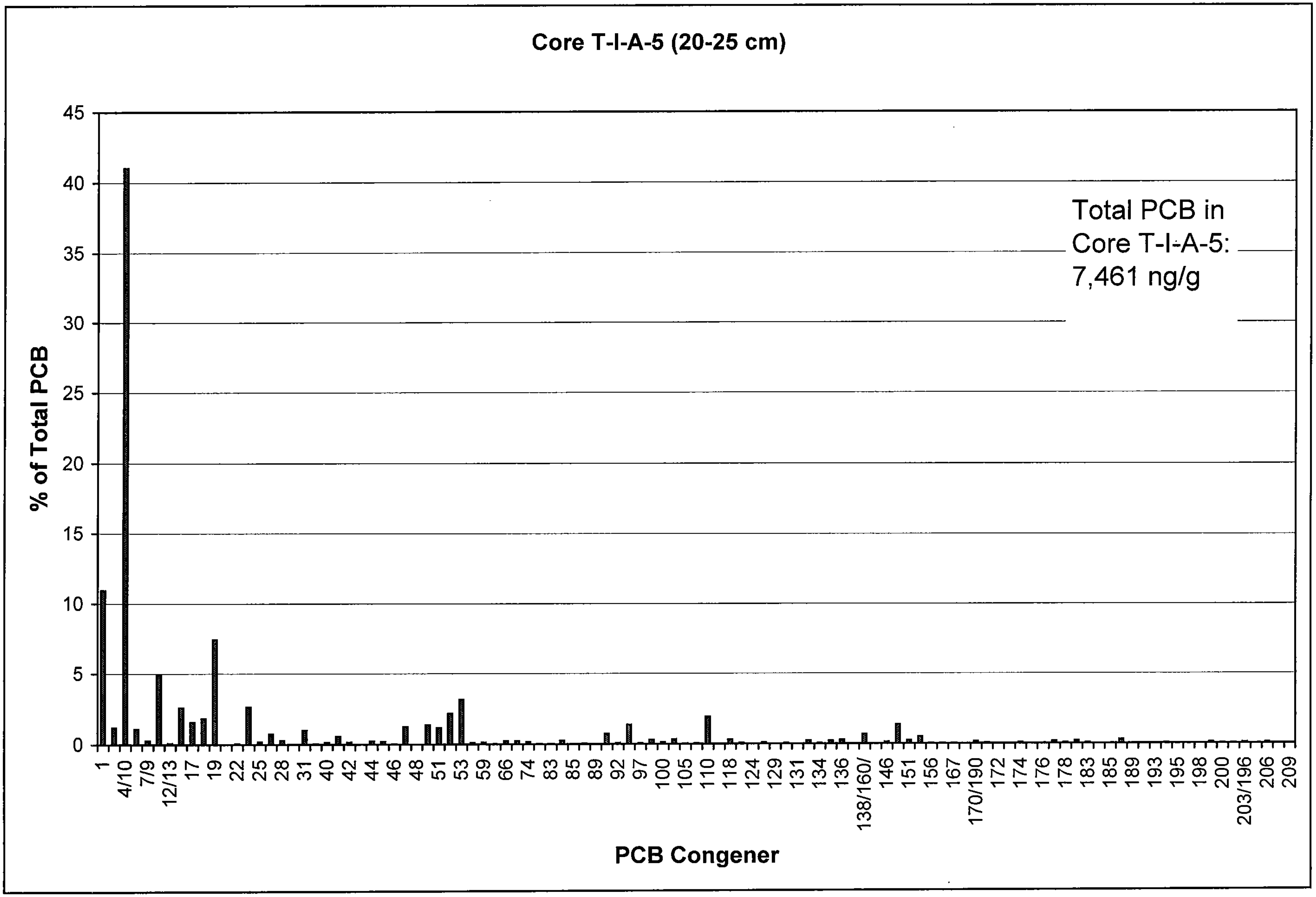
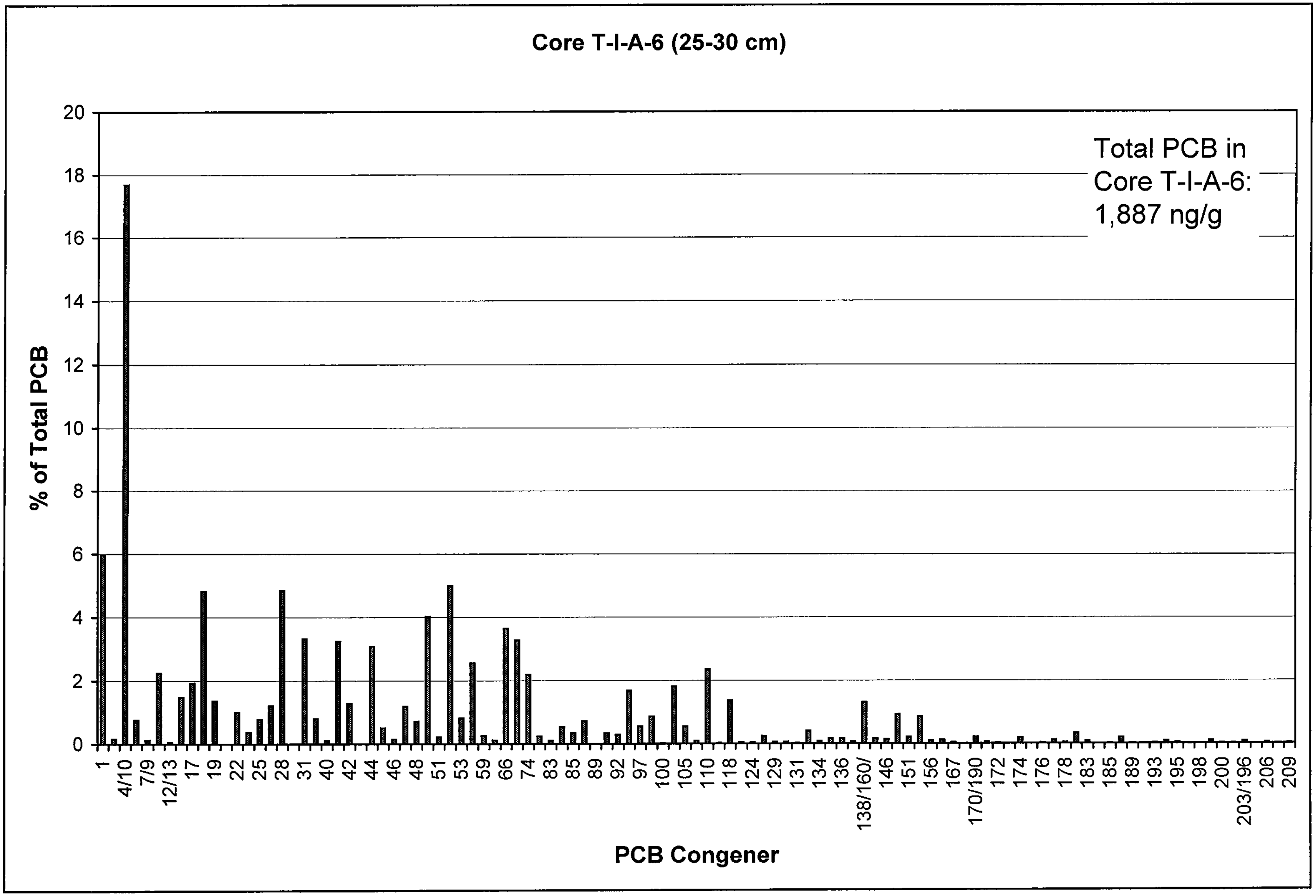
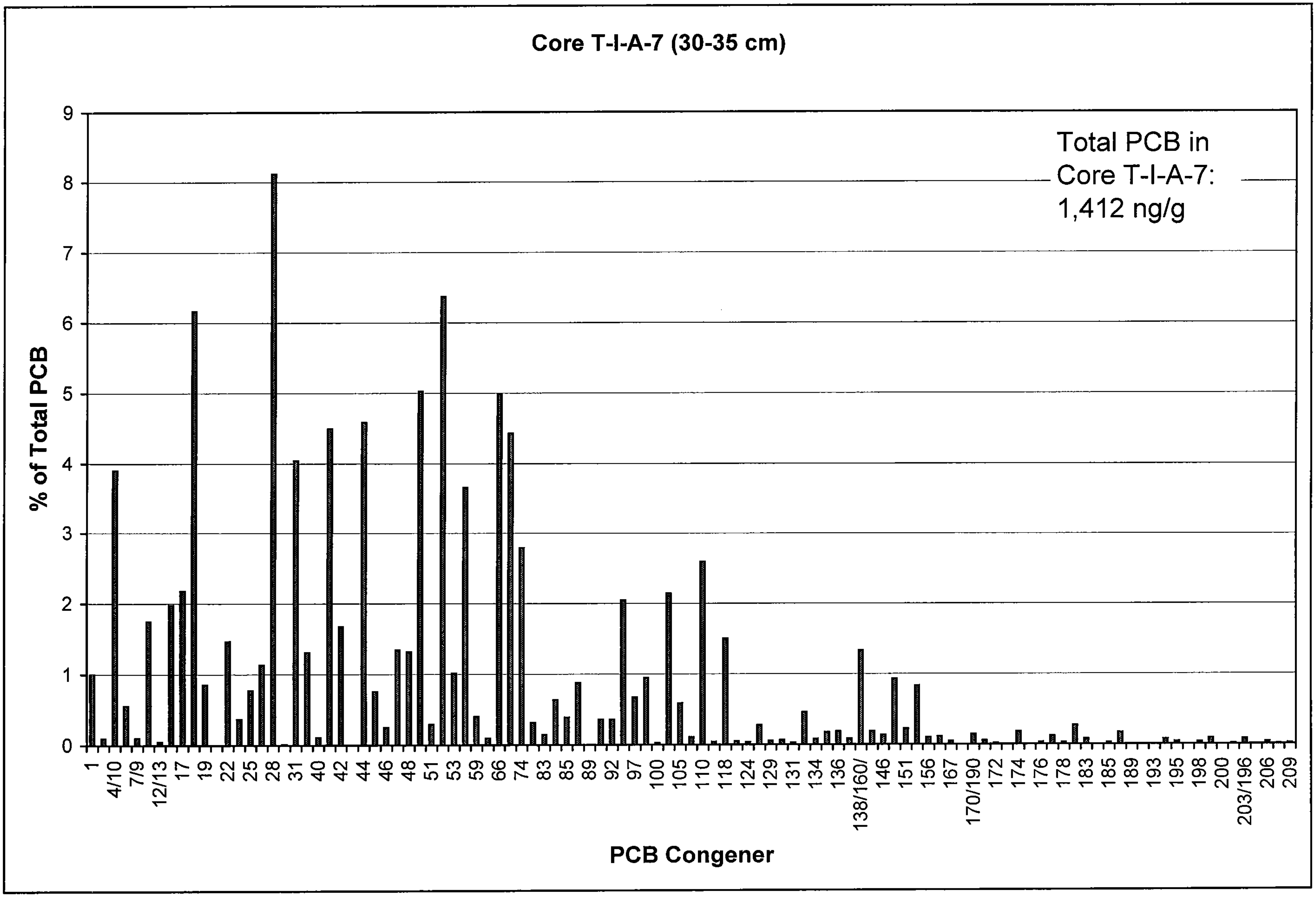
193
195
198
200
203/196
206
209



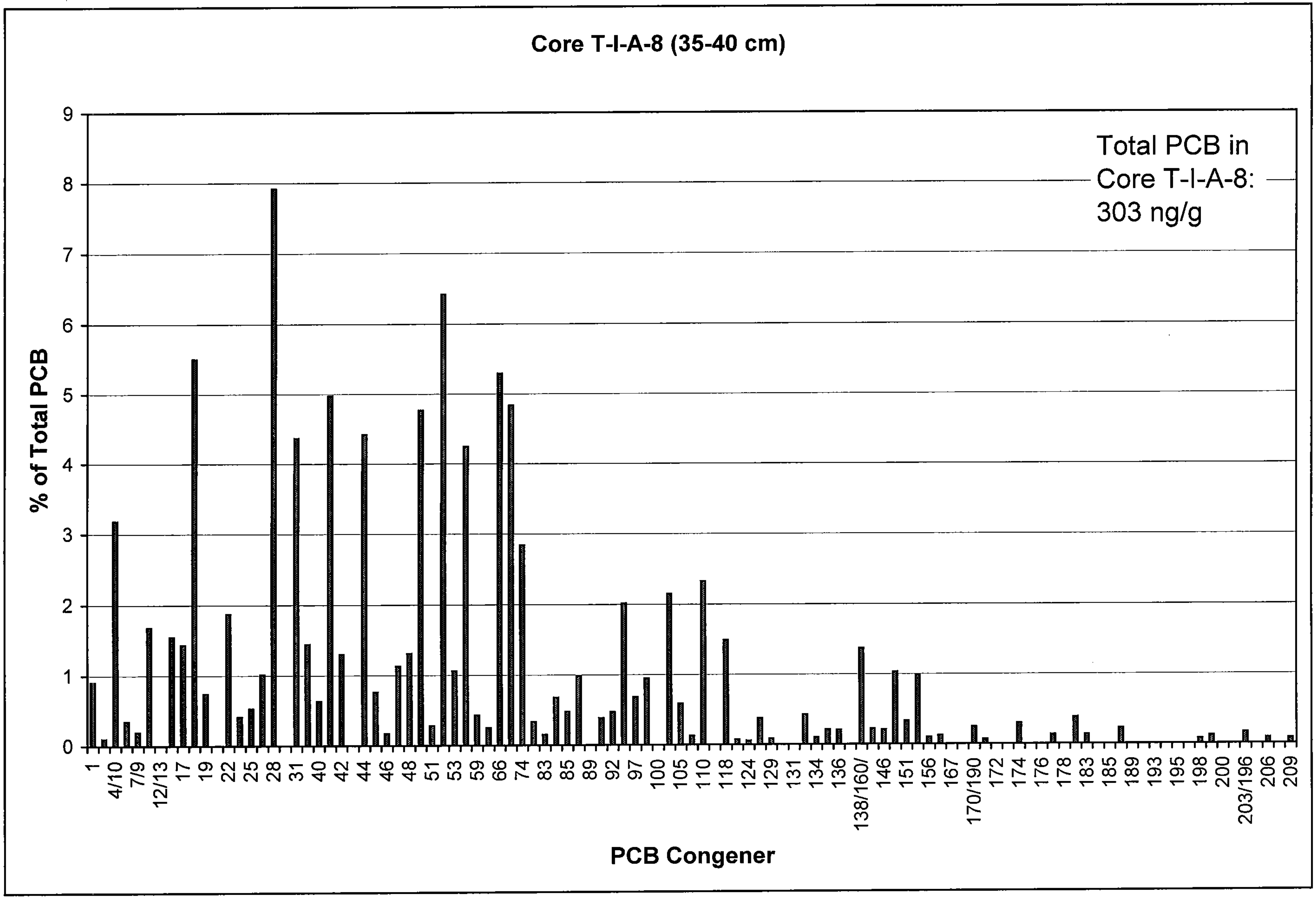
Core T-I-A-5 (20-25 cm)
% of Total PCB
PCB Congener
Total PCB in Core T-I-A-5: 7,461 ng/g
0
5
10
15
20
25
30
35
40
45
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



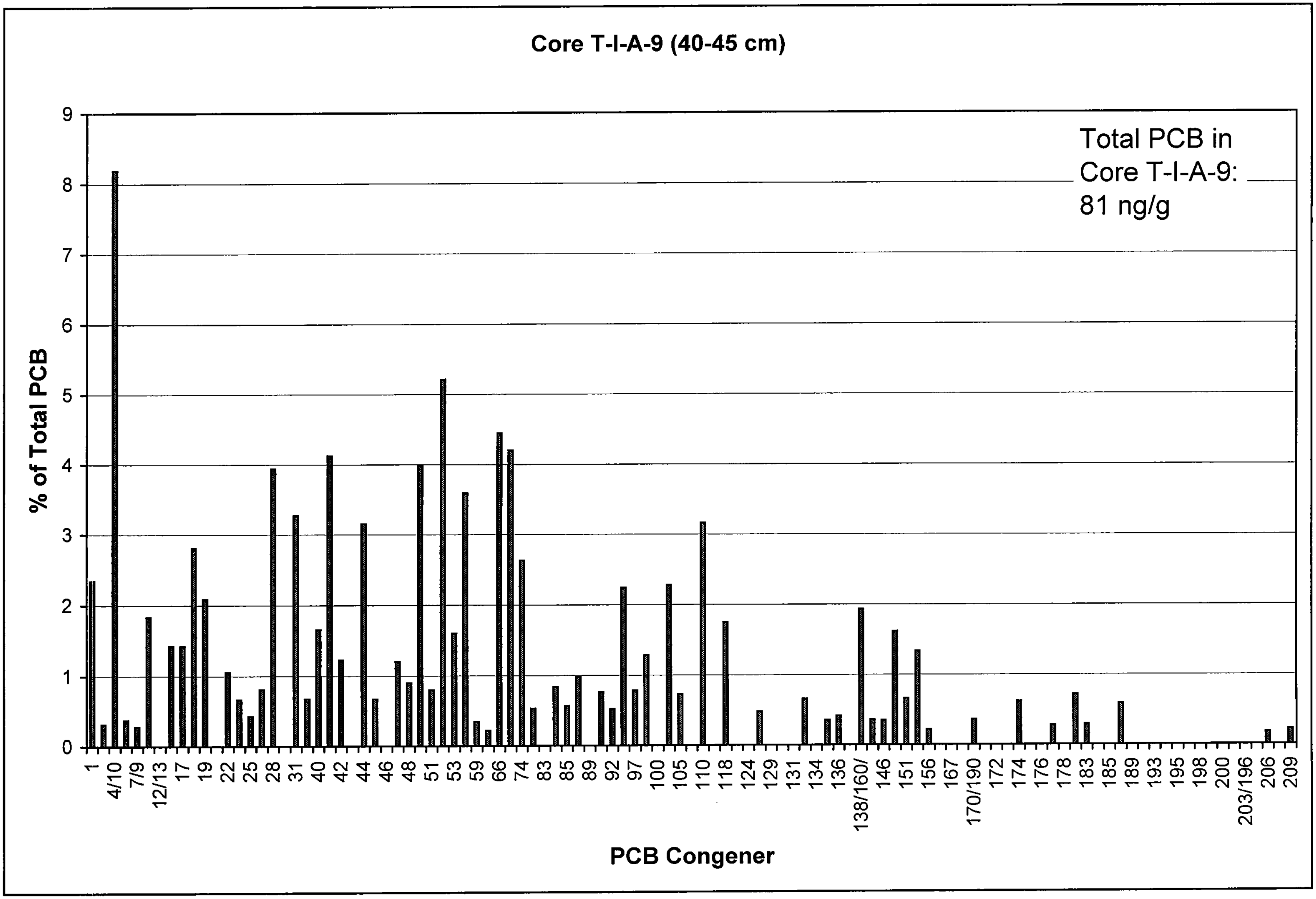
Core T-I-A-6 (25-30 cm)
Total PCB in Core T-I-A-6: 1,887 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
14
16
18
20
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

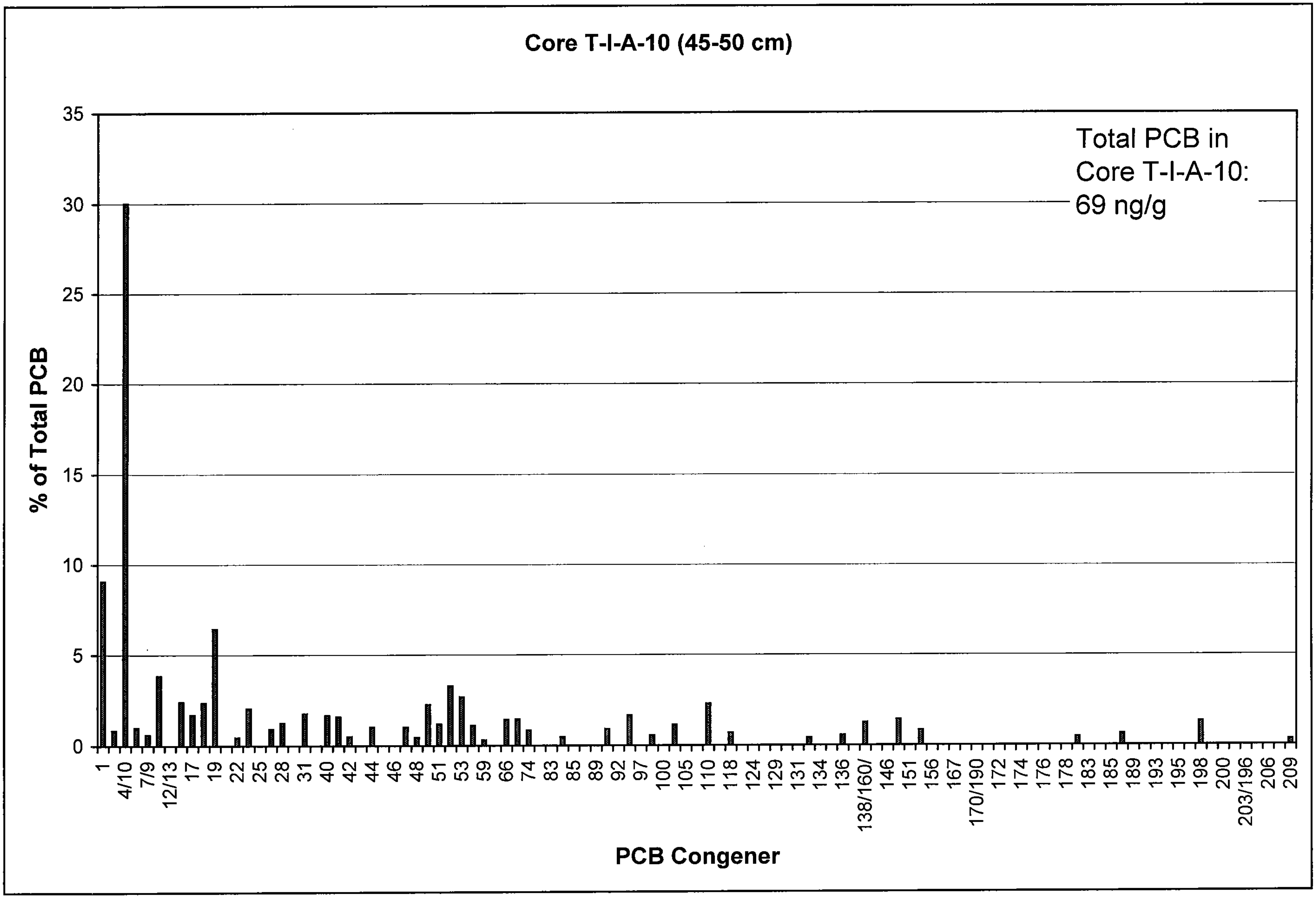


Core T-I-A-7 (30-35 cm)
Total PCB in Core T-I-A-7: 1,412 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

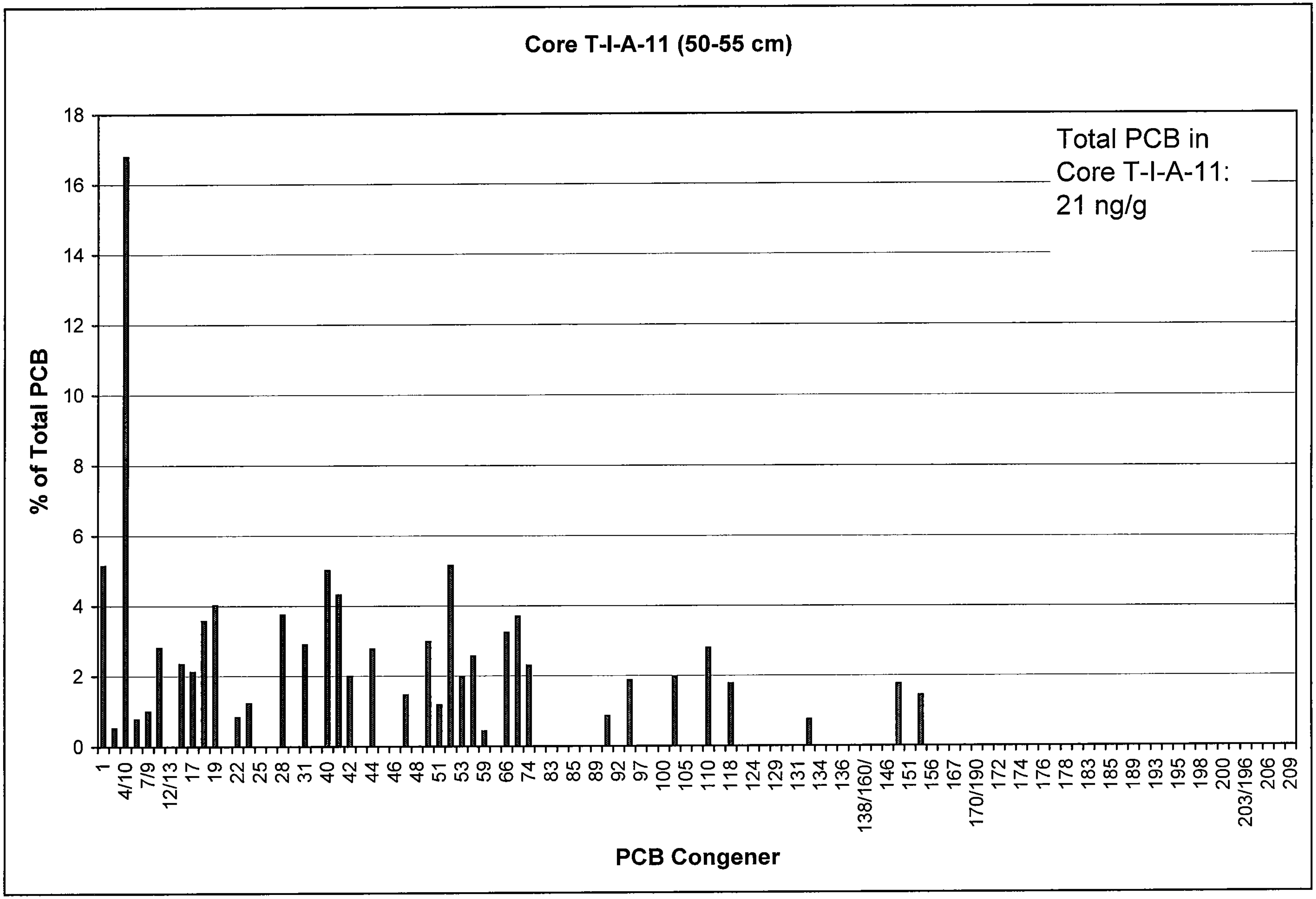


Core T-I-A-8 (35-40 cm)
Total PCB in Core T-I-A-8: 303 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

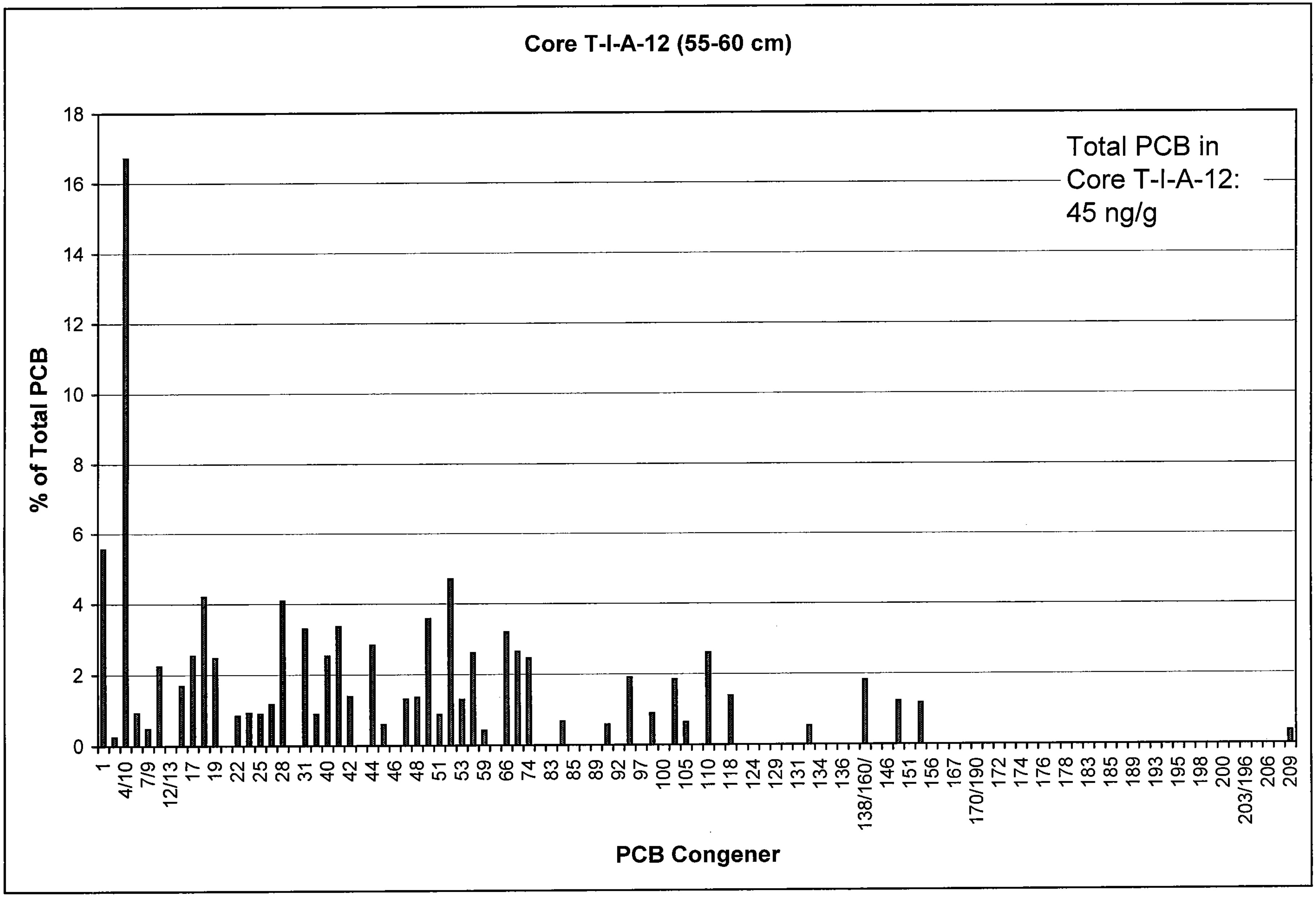

Core T-I-A-9 (40-45 cm)
Total PCB in Core T-I-A-9: 81 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



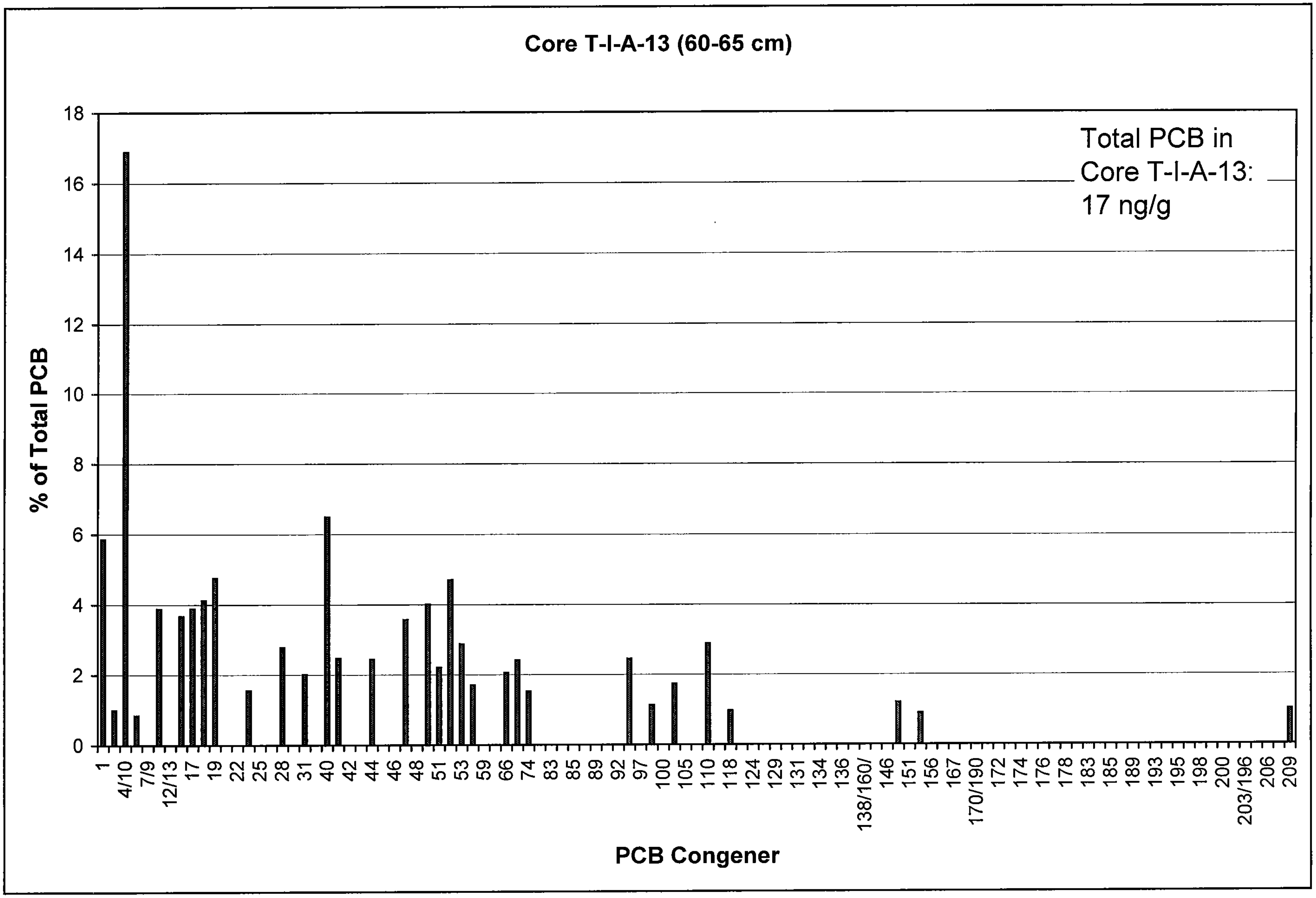
Core T-I-A-10 (45-50 cm)
Total PCB in
Core T-I-A-10:
69 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
35
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



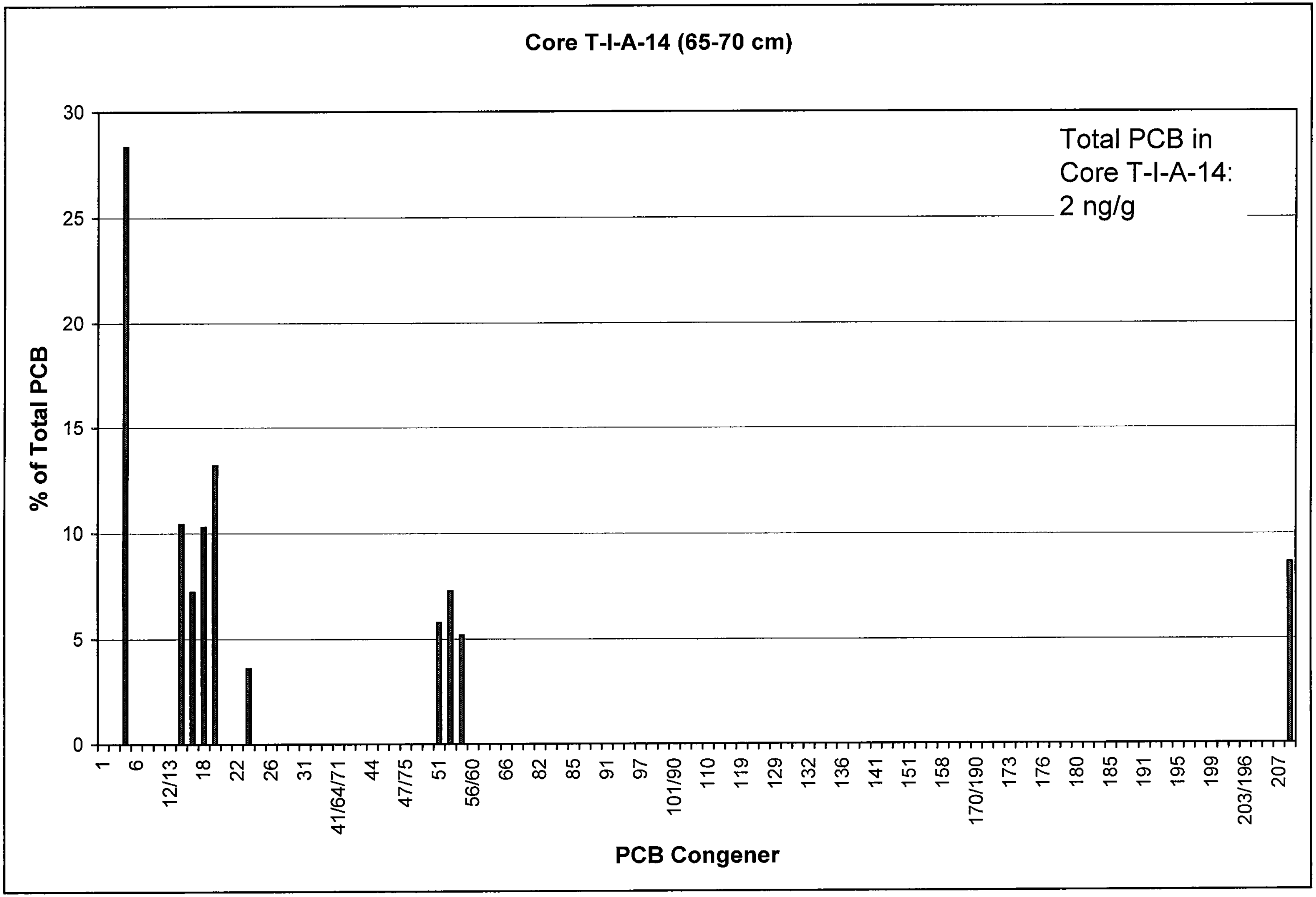
Core T-I-A-11 (50-55 cm)
Total PCB in Core T-I-A-11: 21 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
14
16
18
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



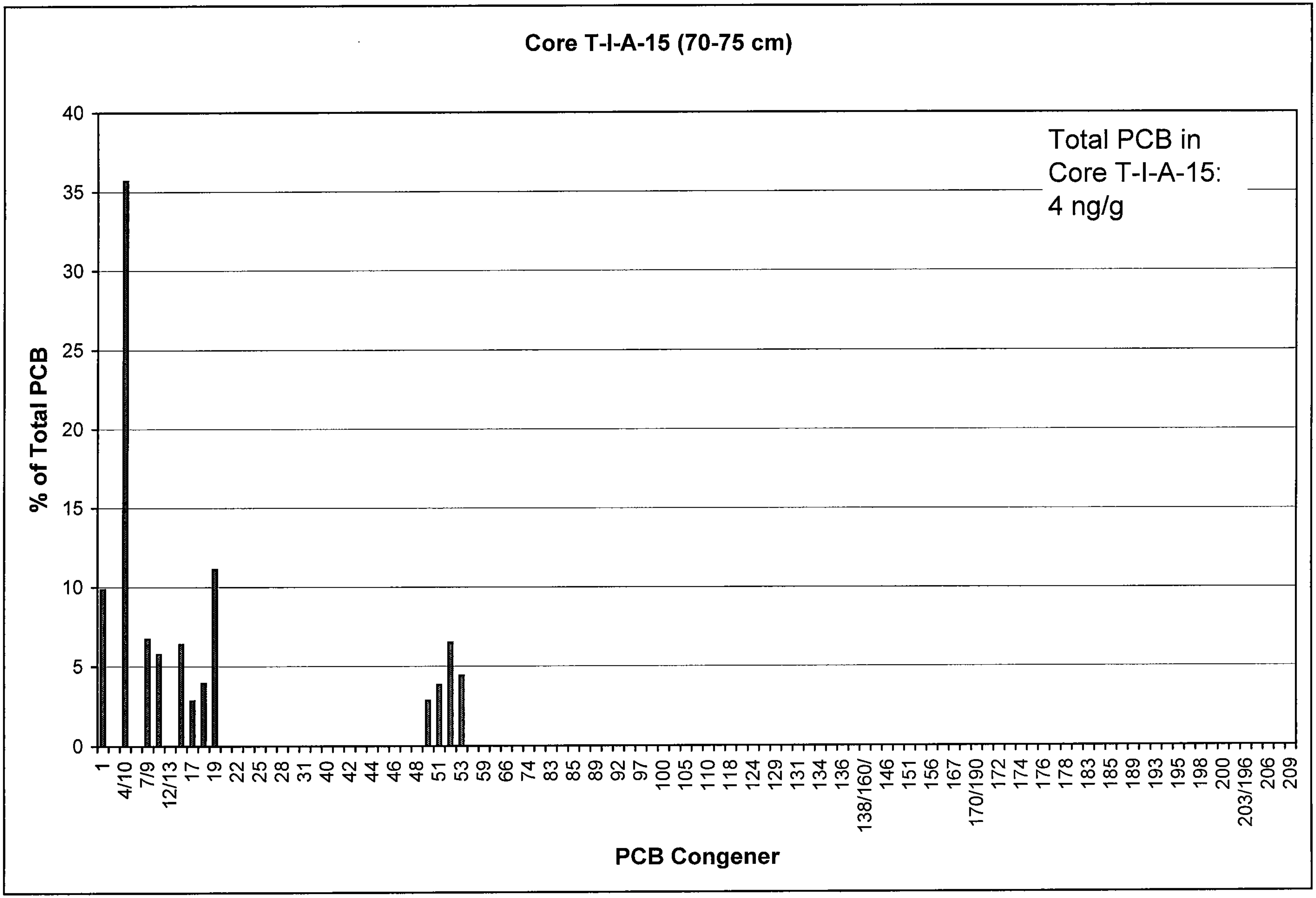
Core T-I-A-12 (55-60 cm)
Total PCB in Core T-I-A-12: 45 ng/g
% of Total PCB
0
2
4
6
8
10
12
14
16
18
1 4/10 7/9 12/13 17 19 22 25 28 31 40 42 44 46 48 51 53 59 66 74 83 85 89 92 97 100 105 110 118 124 129 131 134 136 138/160/ 146 151 156 167 170/190 172 174 176 178 183 185 189 193 195 198 200 203/196 206 209
PCB Congener

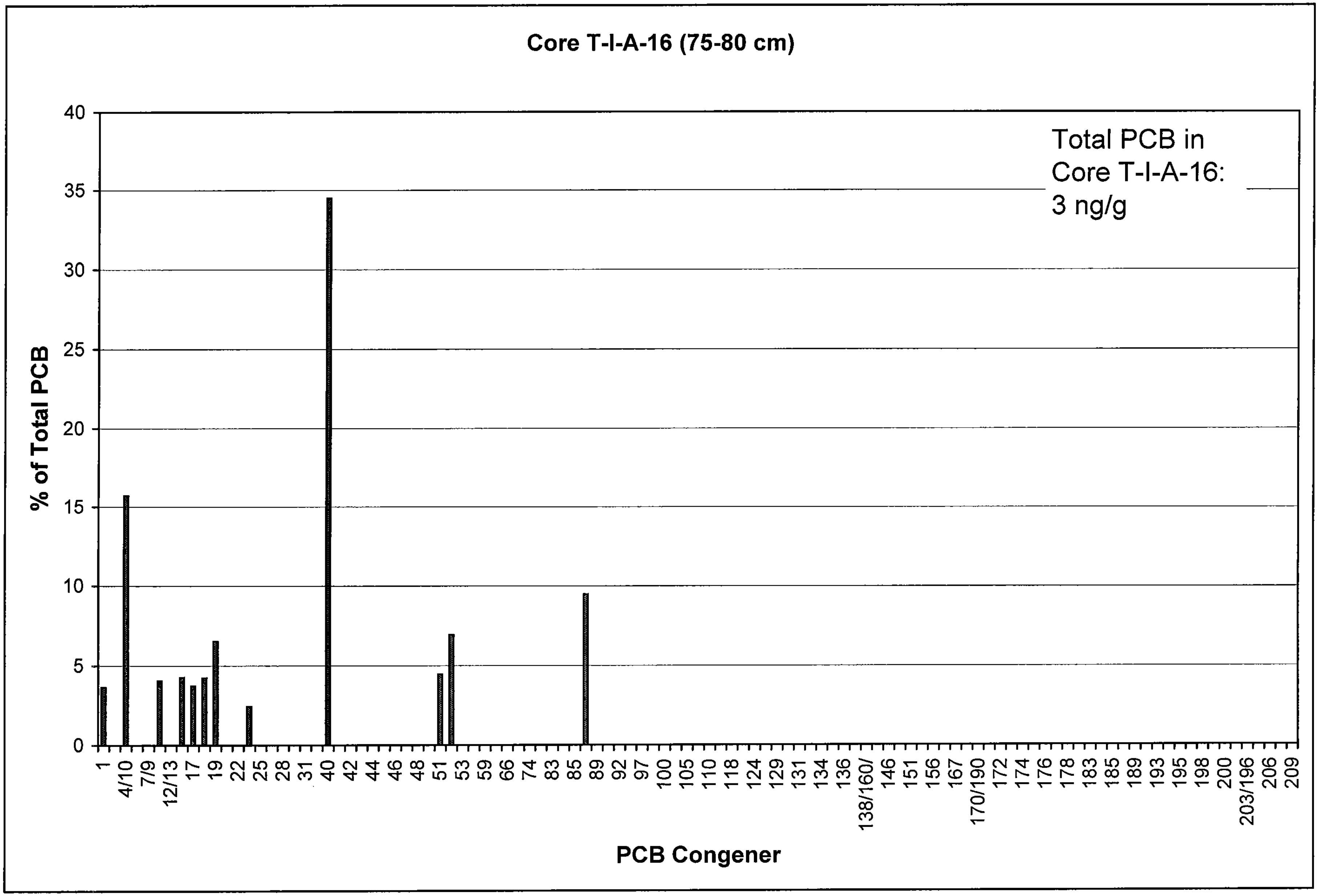


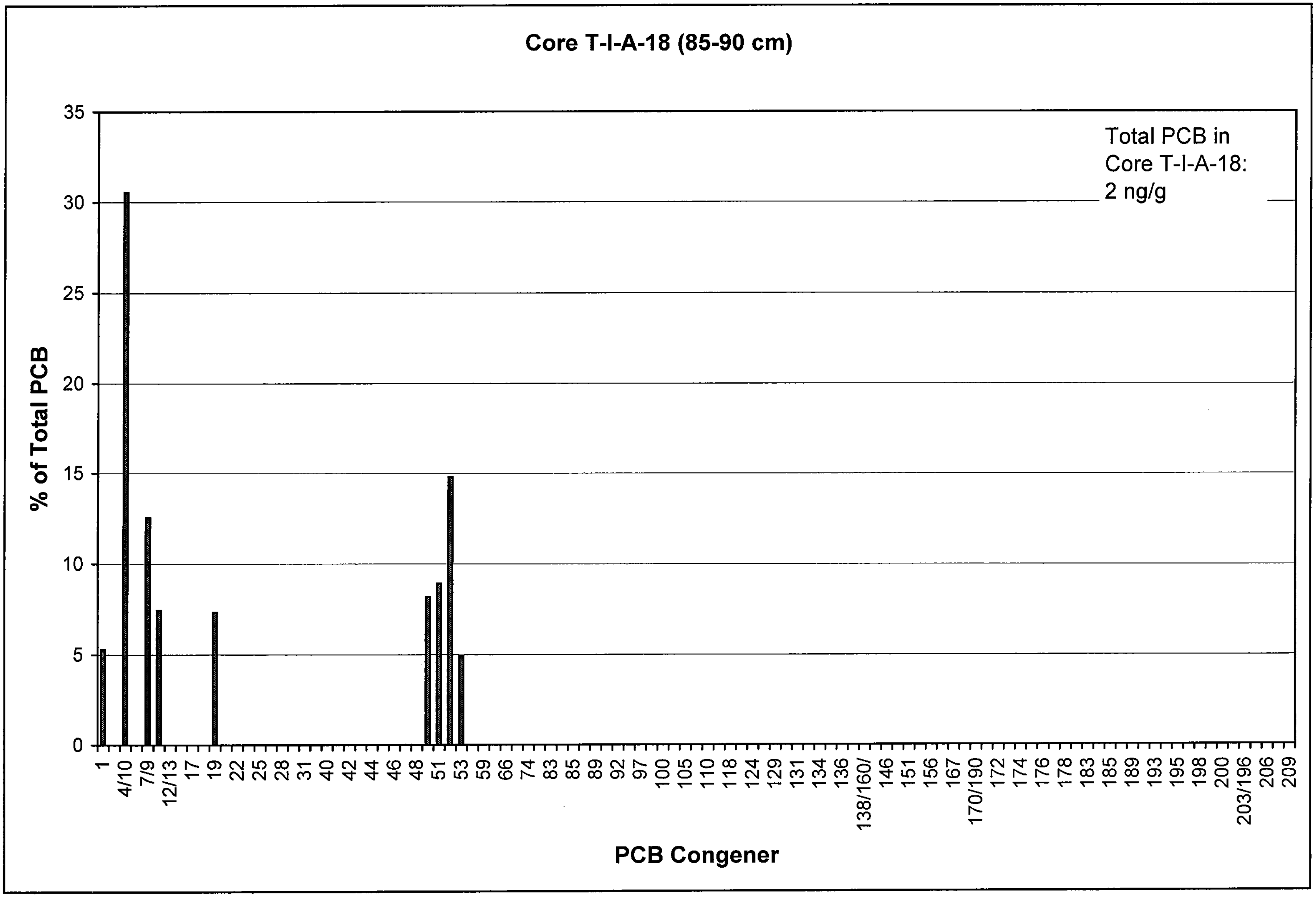
Core T-I-A-13 (60-65 cm)
Total PCB in Core T-I-A-13: 17 ng/g
% of Total PCB
18
16
14
12
10
8
6
4
2
0
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener



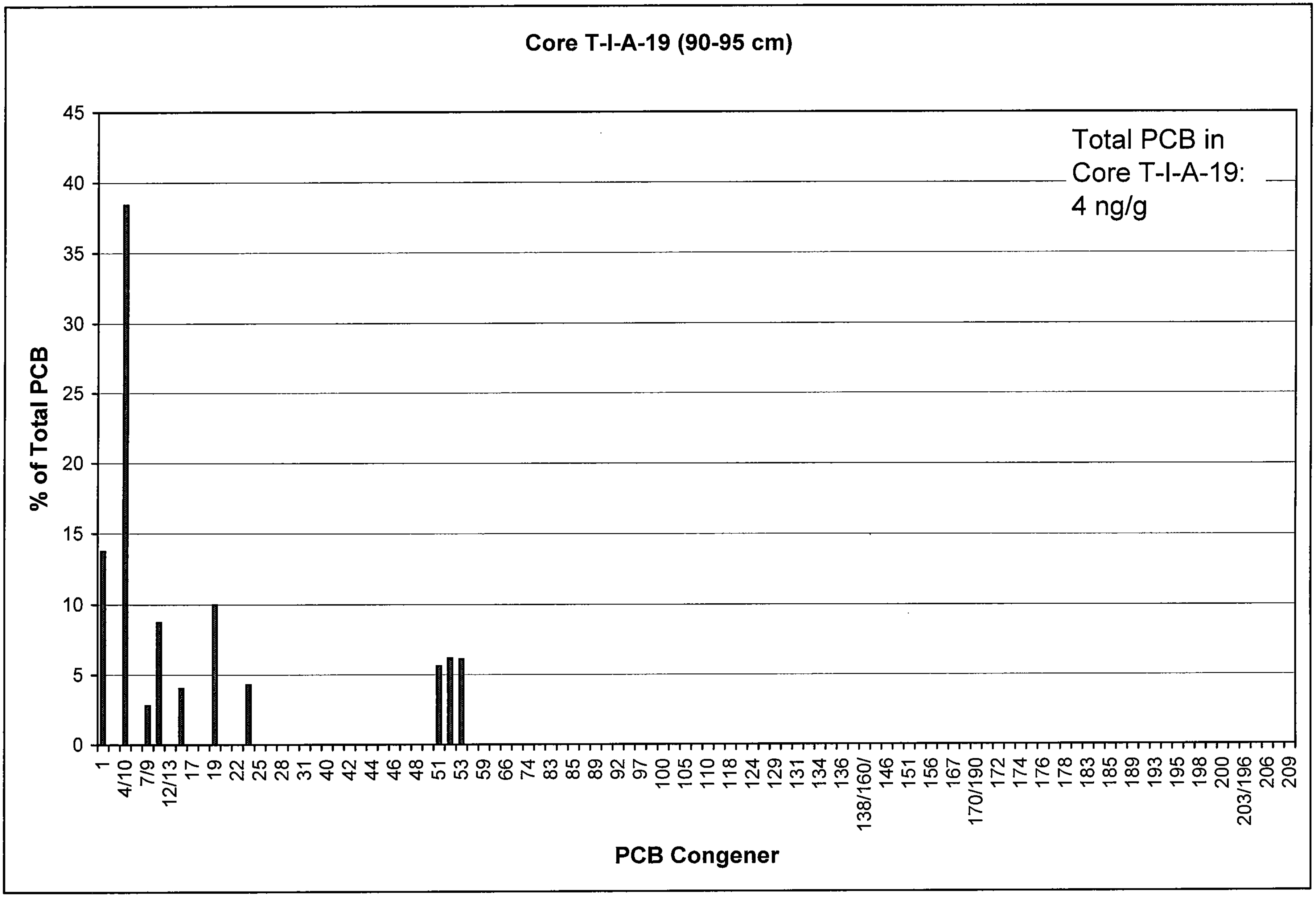
Core T-I-A-14 (65-70 cm)
Total PCB in
Core T-I-A-14:
2 ng/g
% of Total PCB
0
5
10
15
20
25
30
1
6
12/13
18
22
26
31
41/64/71
44
47/75
51
56/60
66
82
85
91
97
101/90
110
119
129
132
136
141
151
158
170/190
173
176
180
185
191
195
199
203/196
207
PCB Congener


Core T-I-A-15 (70-75 cm)
Total PCB in Core T-I-A-15: 4 ng/g
% of Total PCB
0
5
10
15
20
25
30
35
40
PCB Congener
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

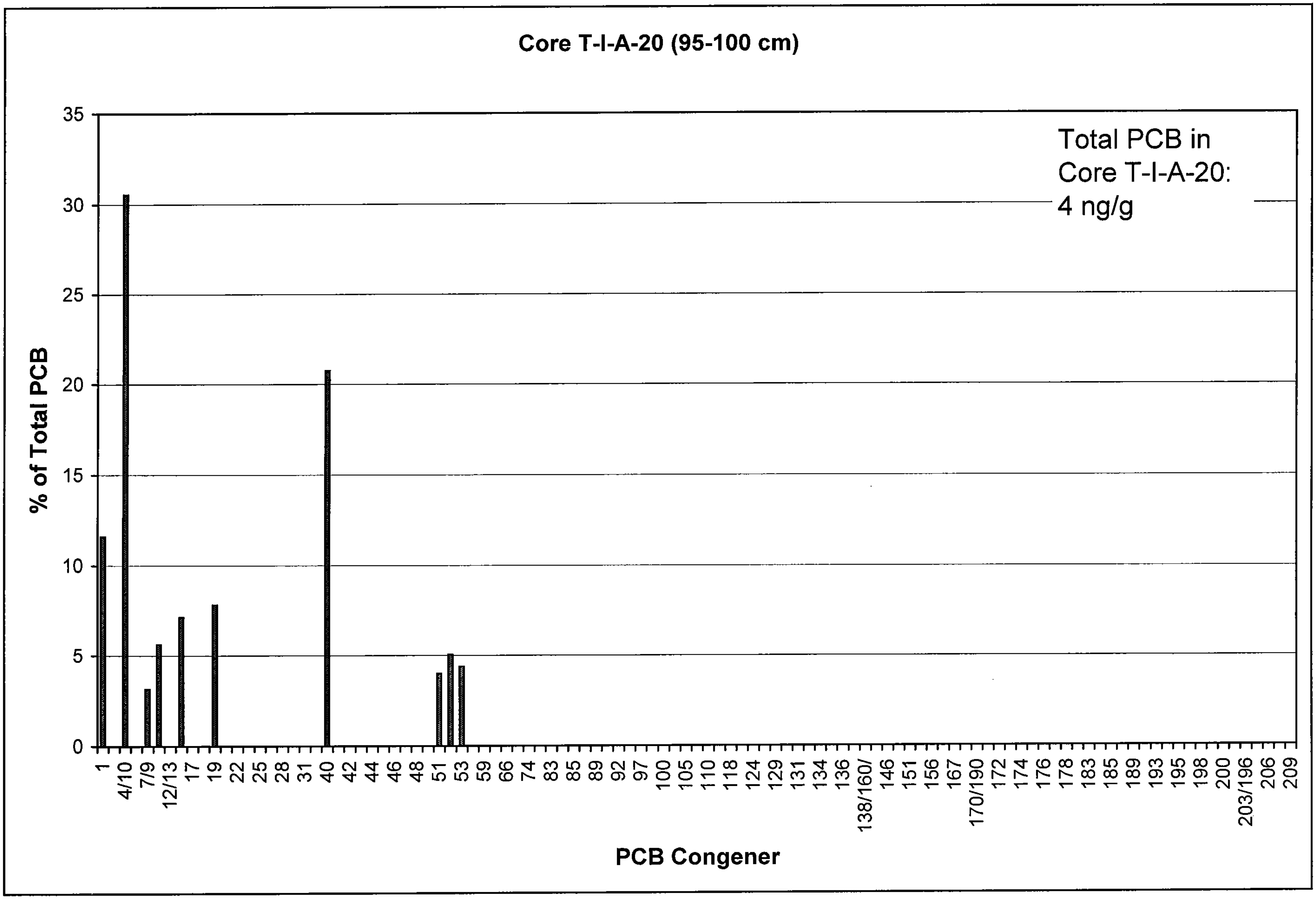

Core T-I-A-16 (75-80 cm)
Total PCB in
Core T-I-A-16:
3 ng/g
% of Total PCB
0
5
10
15
20
25
30
35
40
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener



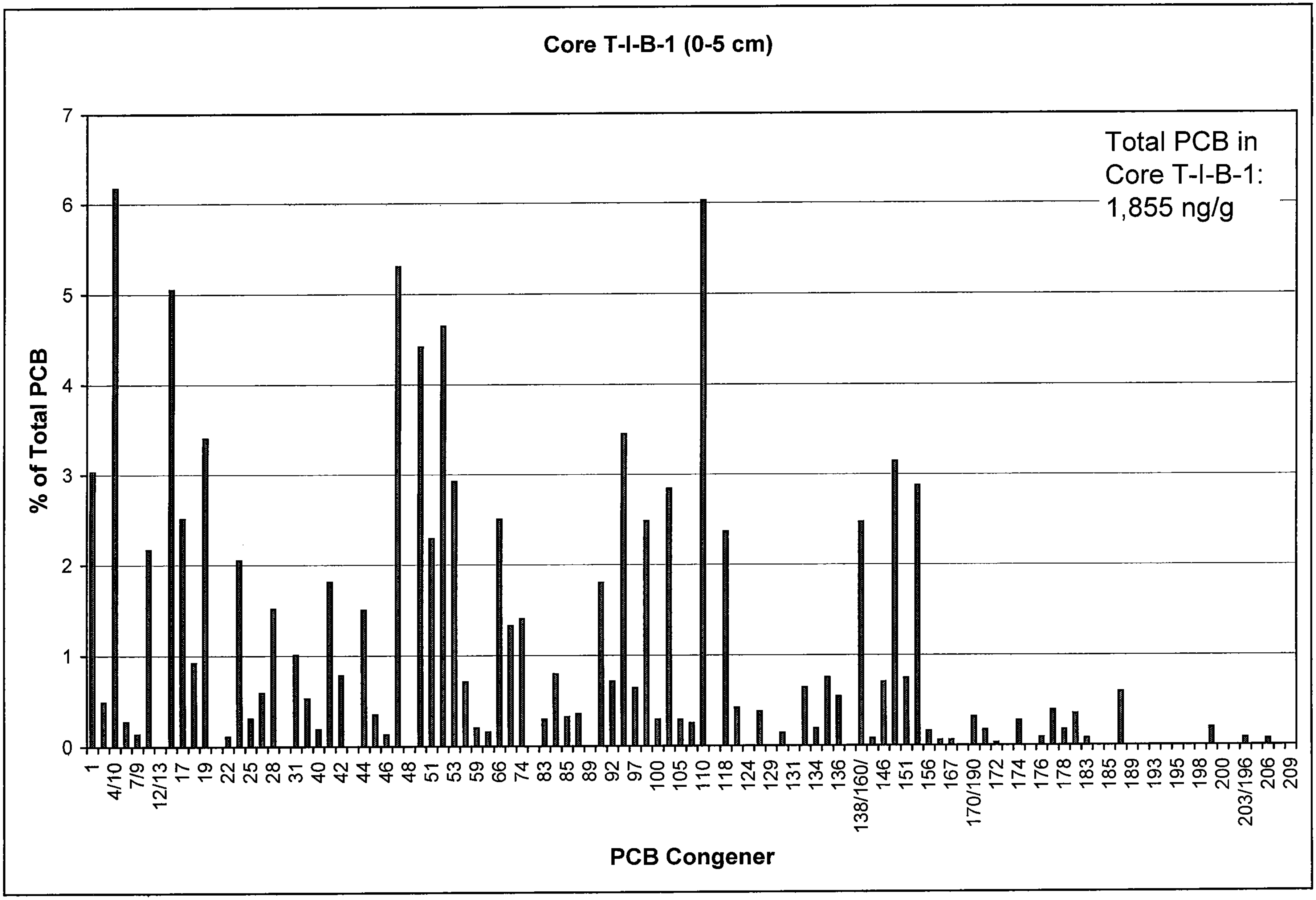
Core T-I-A-18 (85-90 cm)
Total PCB in
Core T-I-A-18:
2 ng/g
% of Total PCB
0
5
10
15
20
25
30
35
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

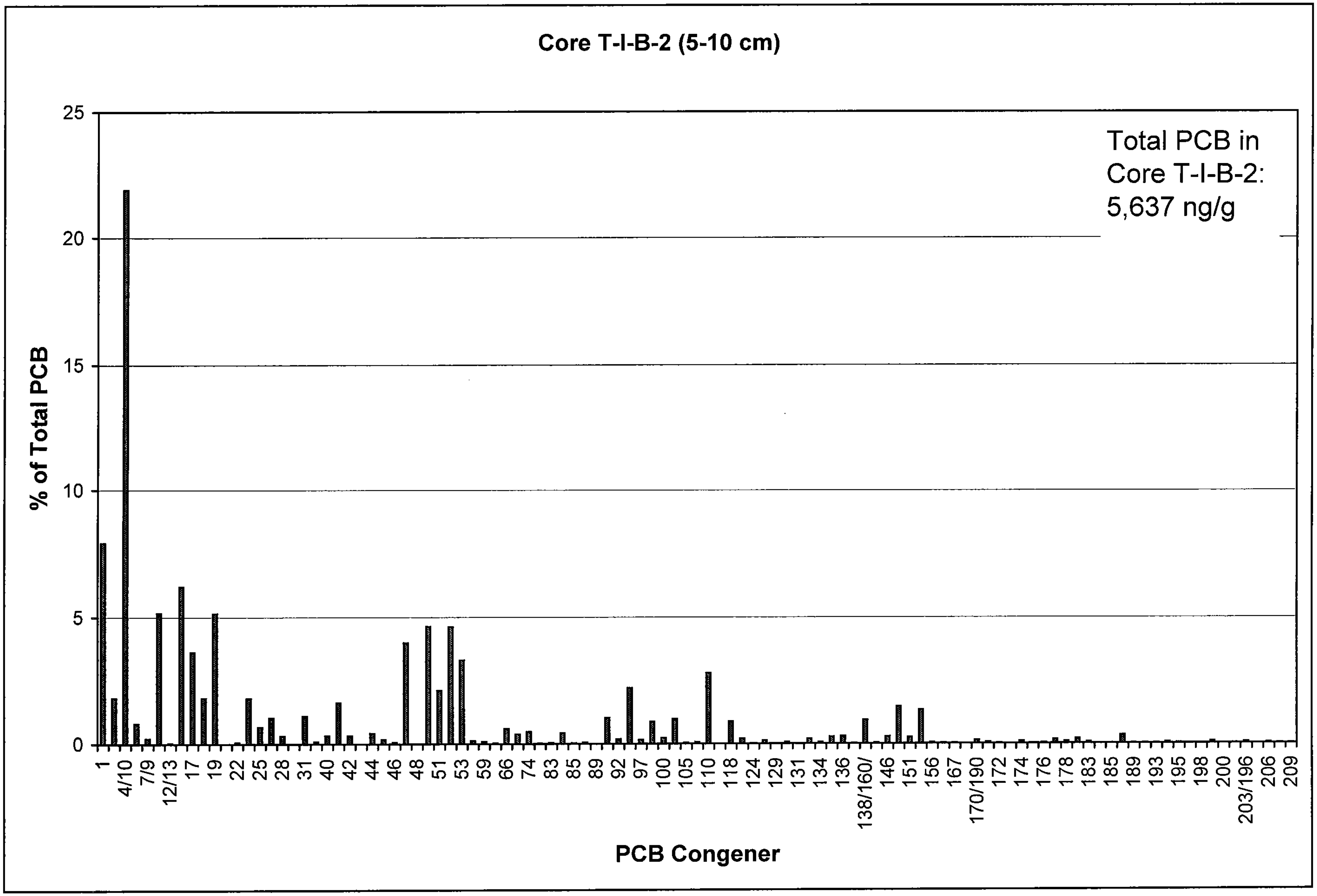


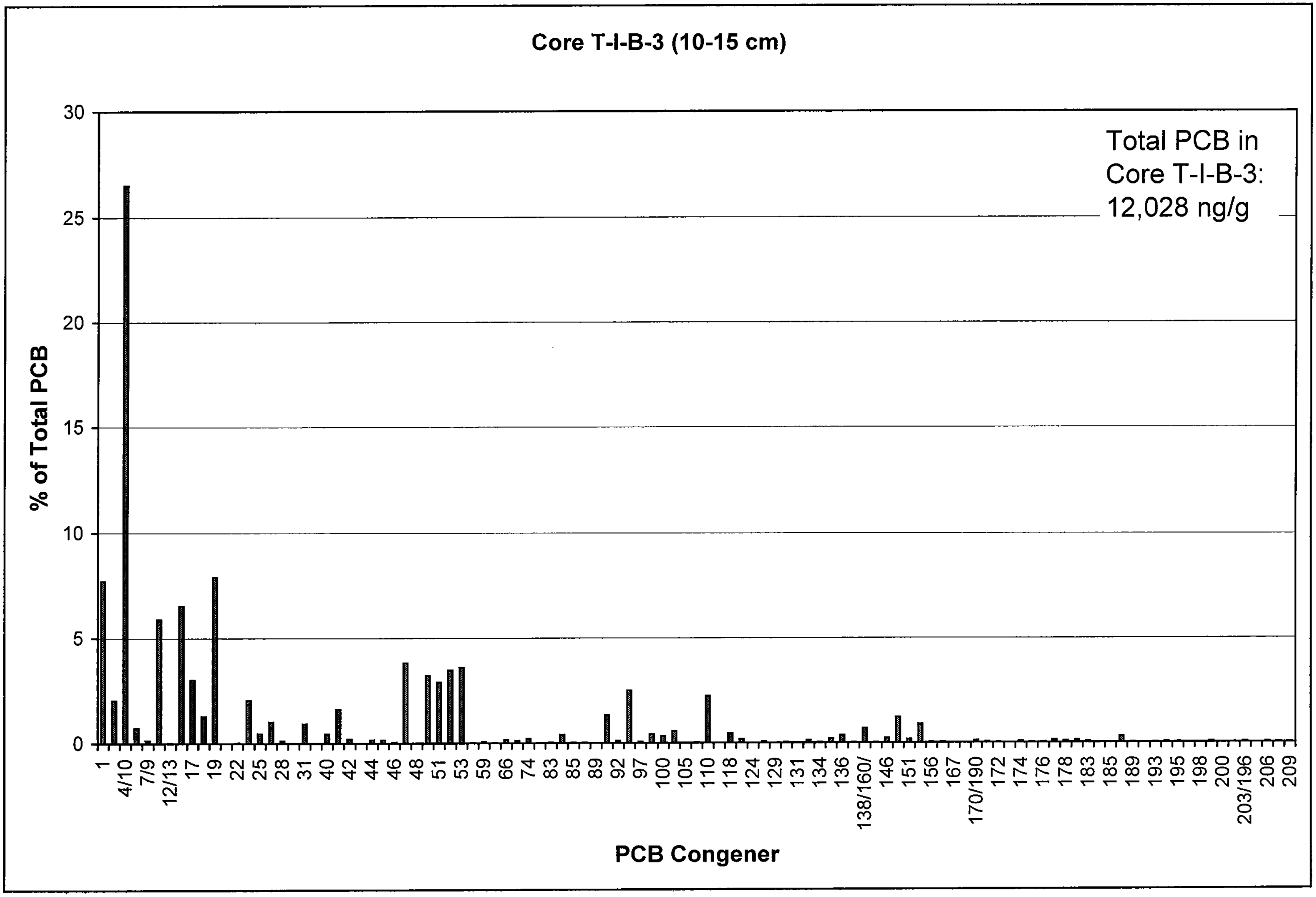
Core T-I-A-19 (90-95 cm)
Total PCB in Core T-I-A-19: 4 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
35
40
45
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



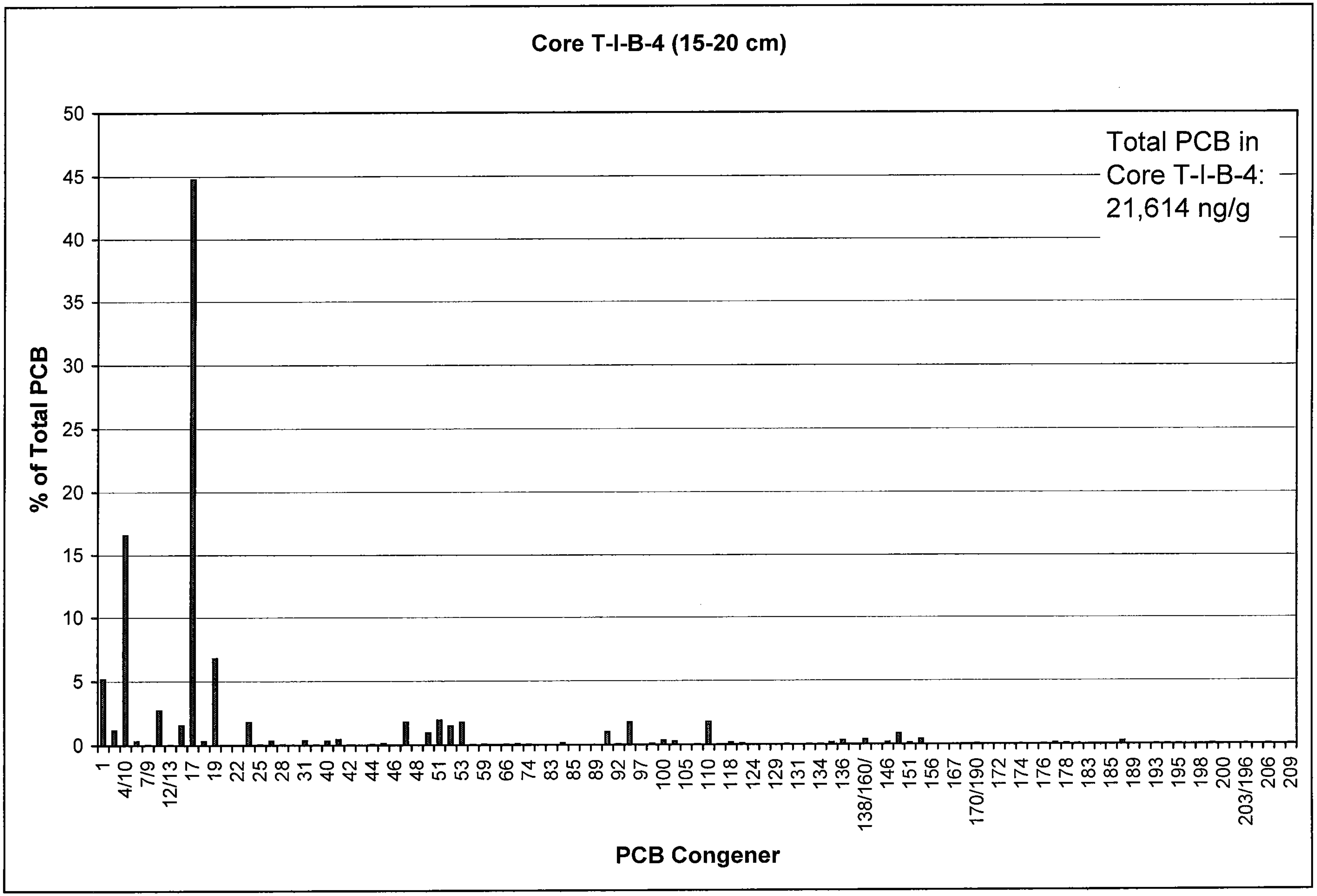
Core T-I-A-20 (95-100 cm)
Total PCB in
Core T-I-A-20:
4 ng/g
% of Total PCB
0
5
10
15
20
25
30
35
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener


Core T-I-B-1 (0-5 cm)
Total PCB in Core T-I-B-1: 1,855 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209


Core T-I-B-2 (5-10 cm)
Total PCB in Core T-I-B-2: 5,637 ng/g
% of Total PCB
0
5
10
15
20
25
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

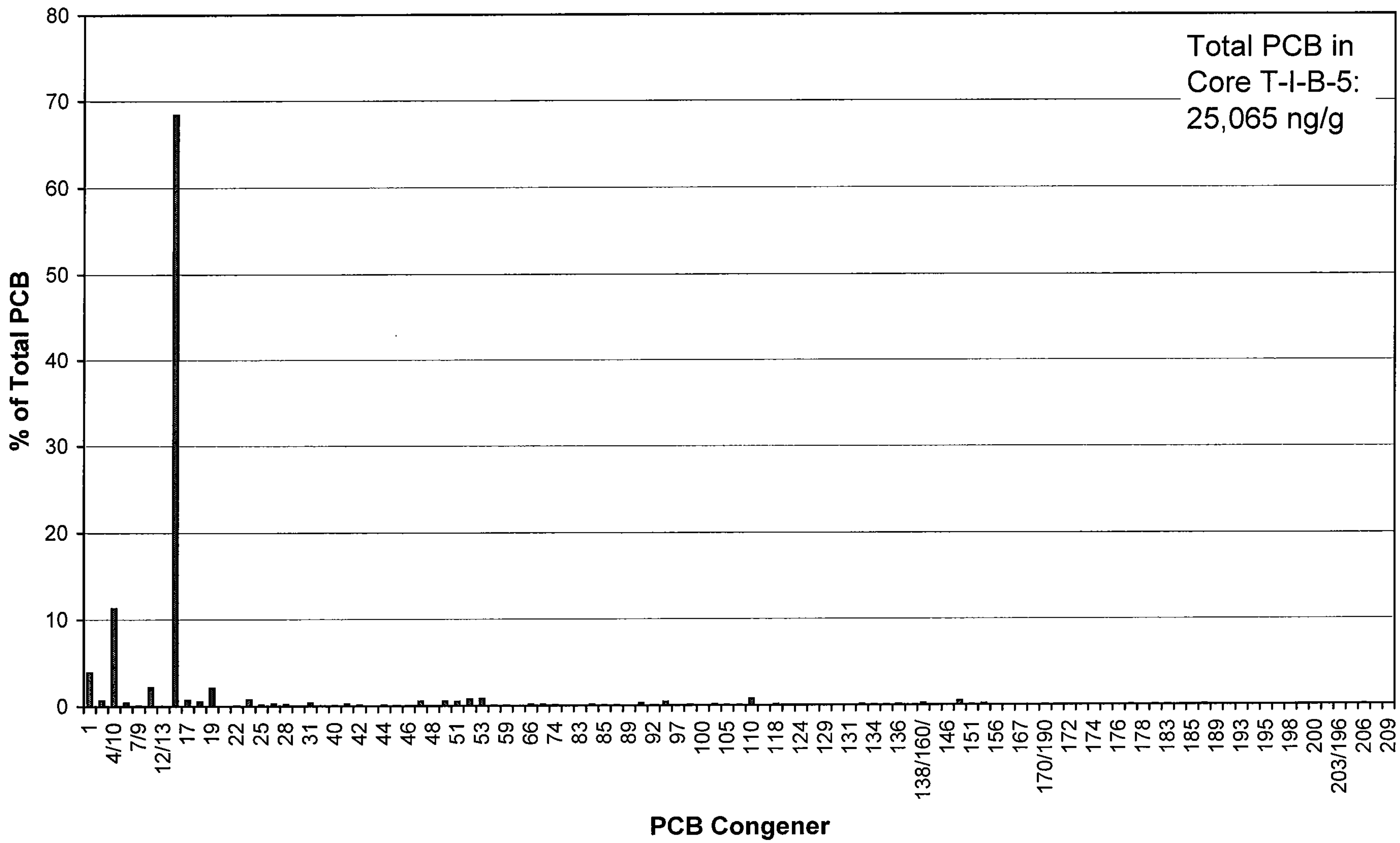


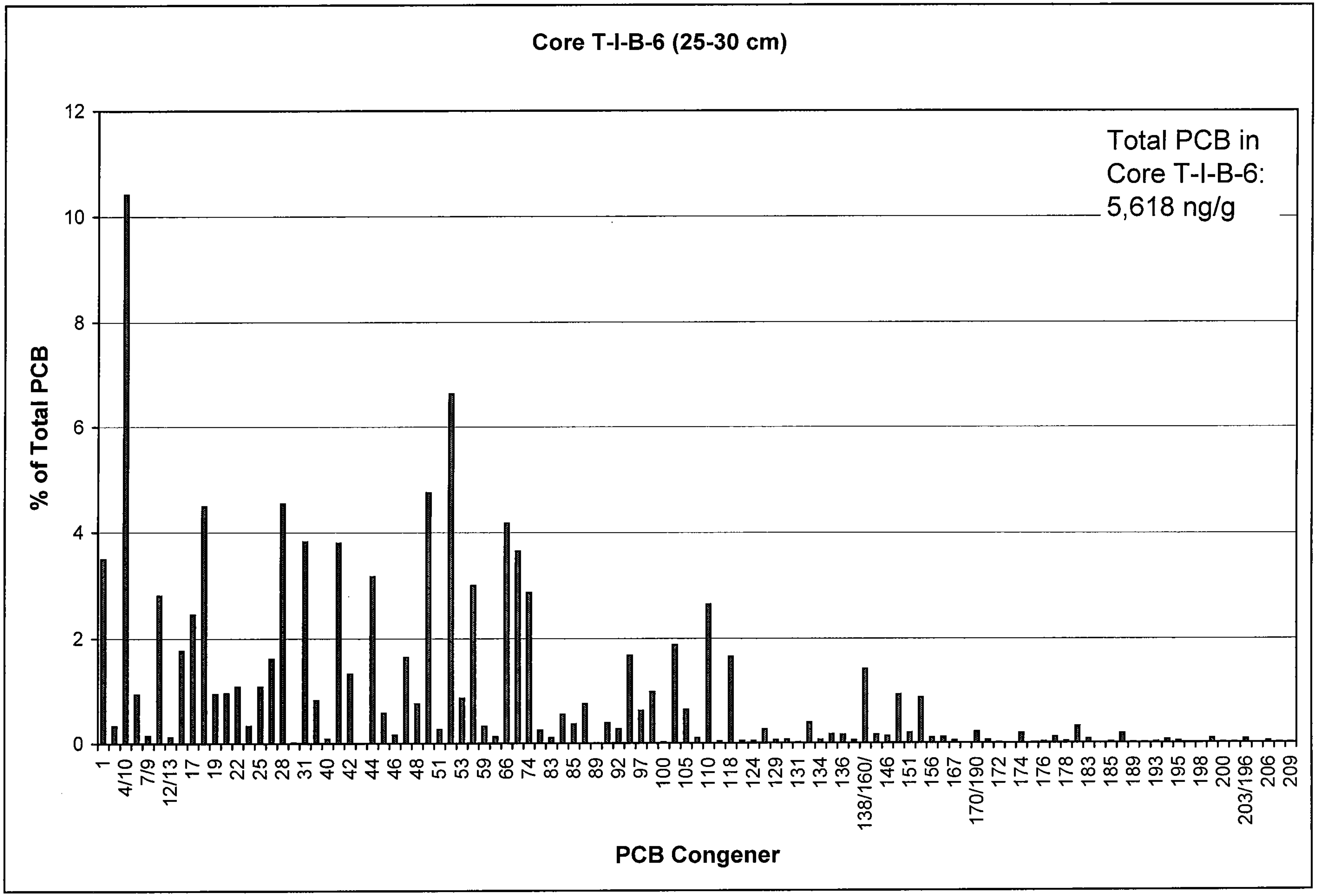
Core T-I-B-3 (10-15 cm)
Total PCB in Core T-I-B-3: 12,028 ng/g
% of Total PCB
0
5
10
15
20
25
30
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

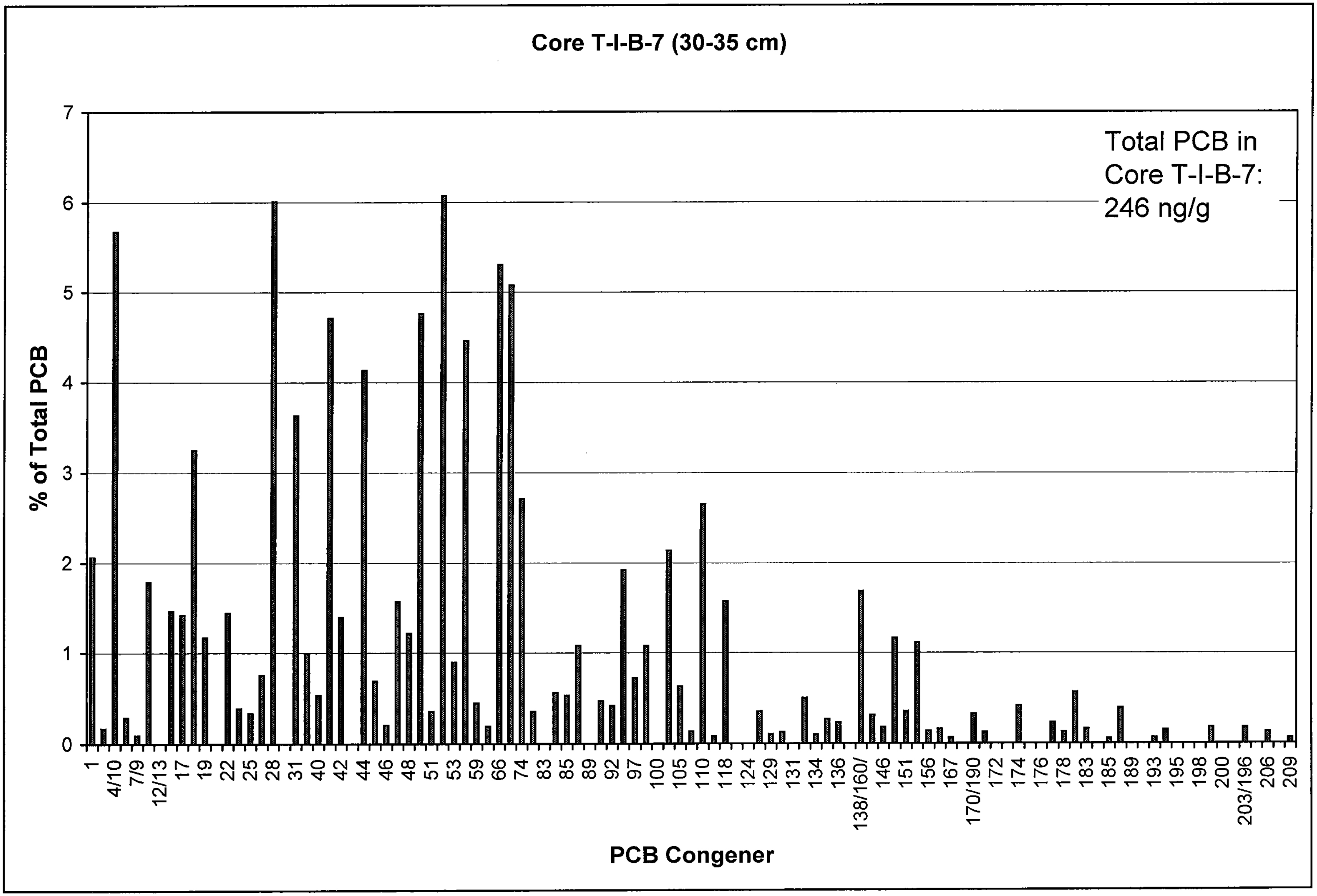


Core T-I-B-4 (15-20 cm)
Total PCB in Core T-I-B-4: 21,614 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
35
40
45
50
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

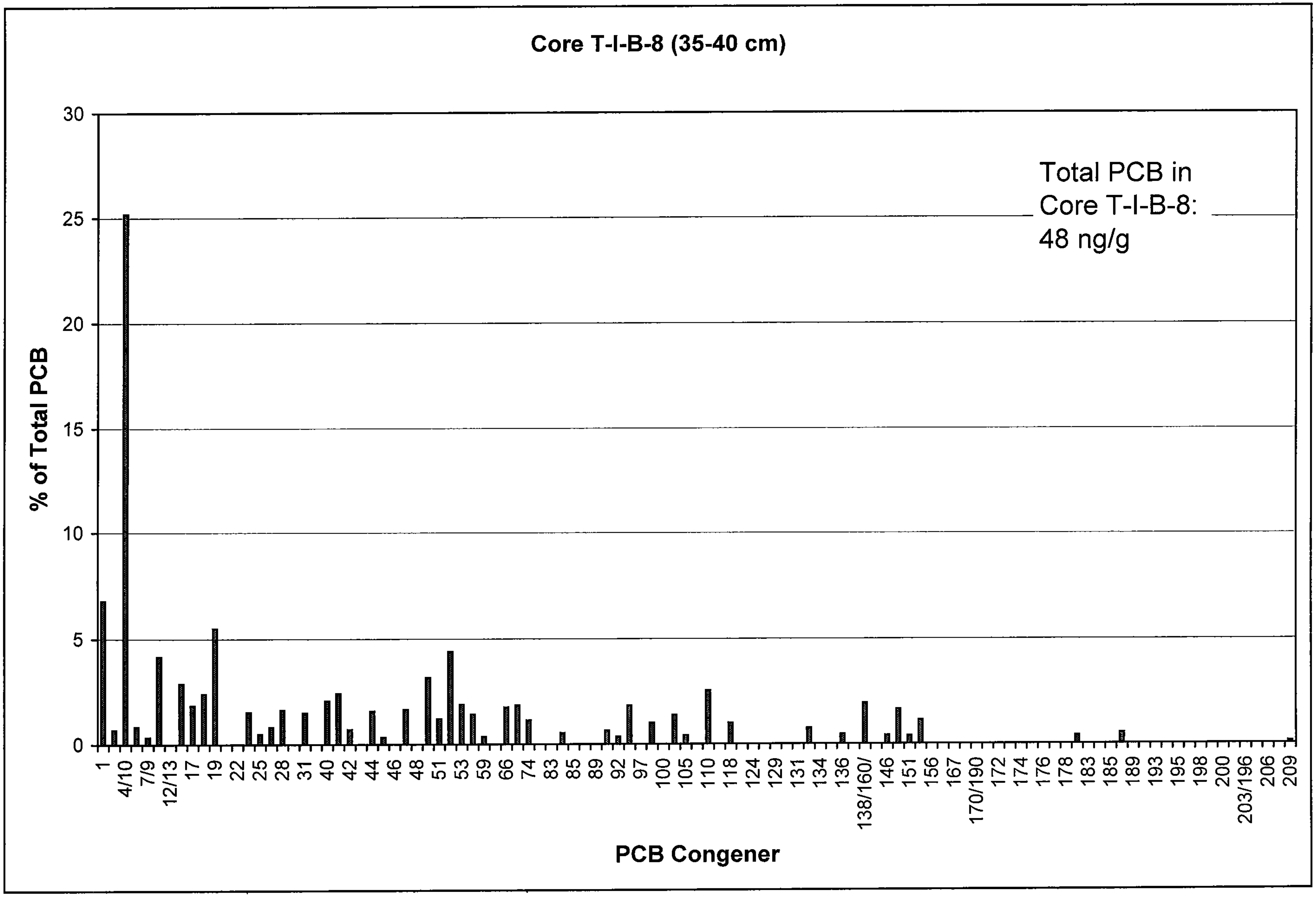
Core T-I-B-5 (20-25 cm)



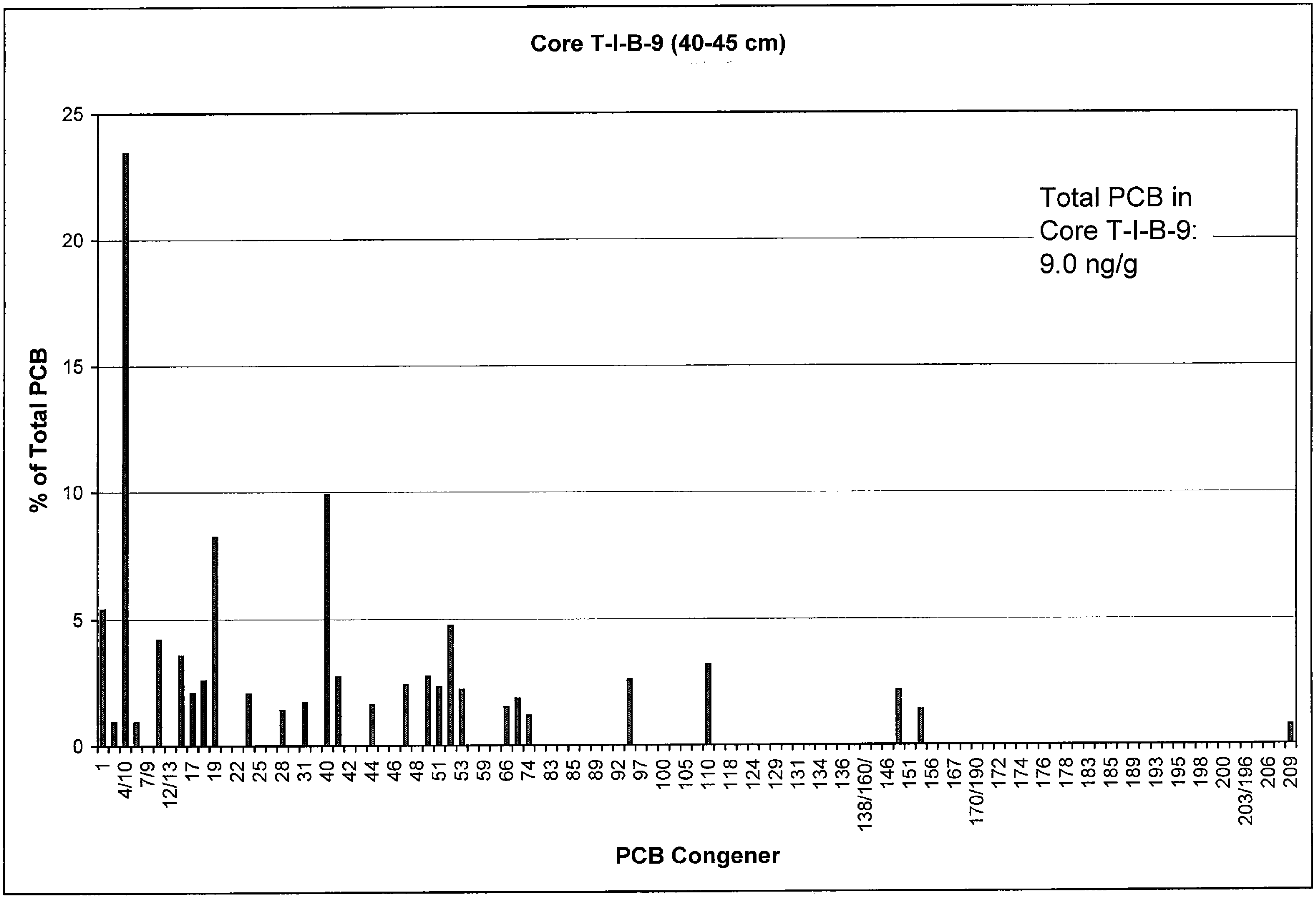

Core T-I-B-6 (25-30 cm)
Total PCB in Core T-I-B-6: 5,618 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



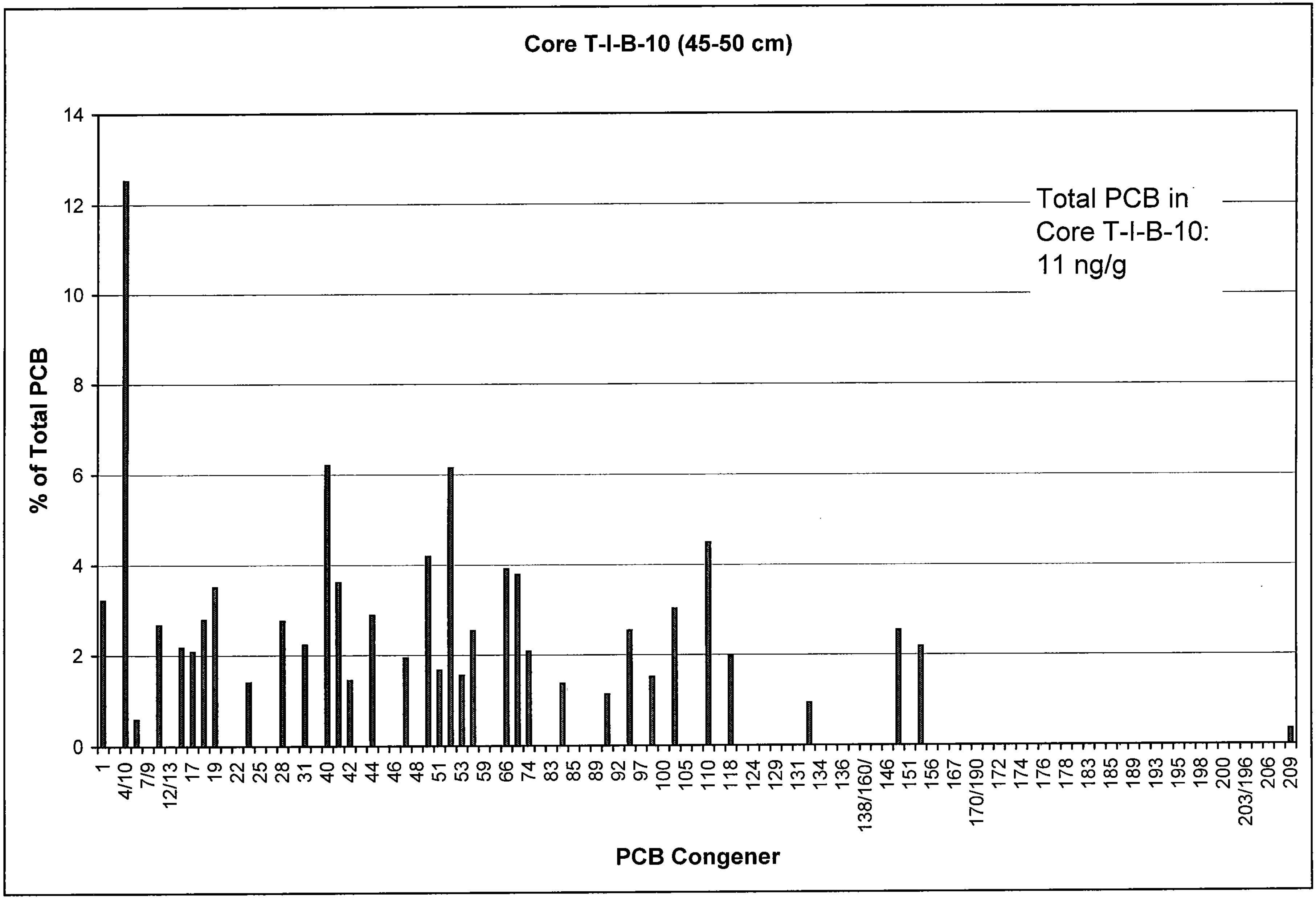
Core T-I-B-7 (30-35 cm)
Total PCB in Core T-I-B-7: 246 ng/g
% of Total PCB
0
1
2
3
4
5
6
7
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

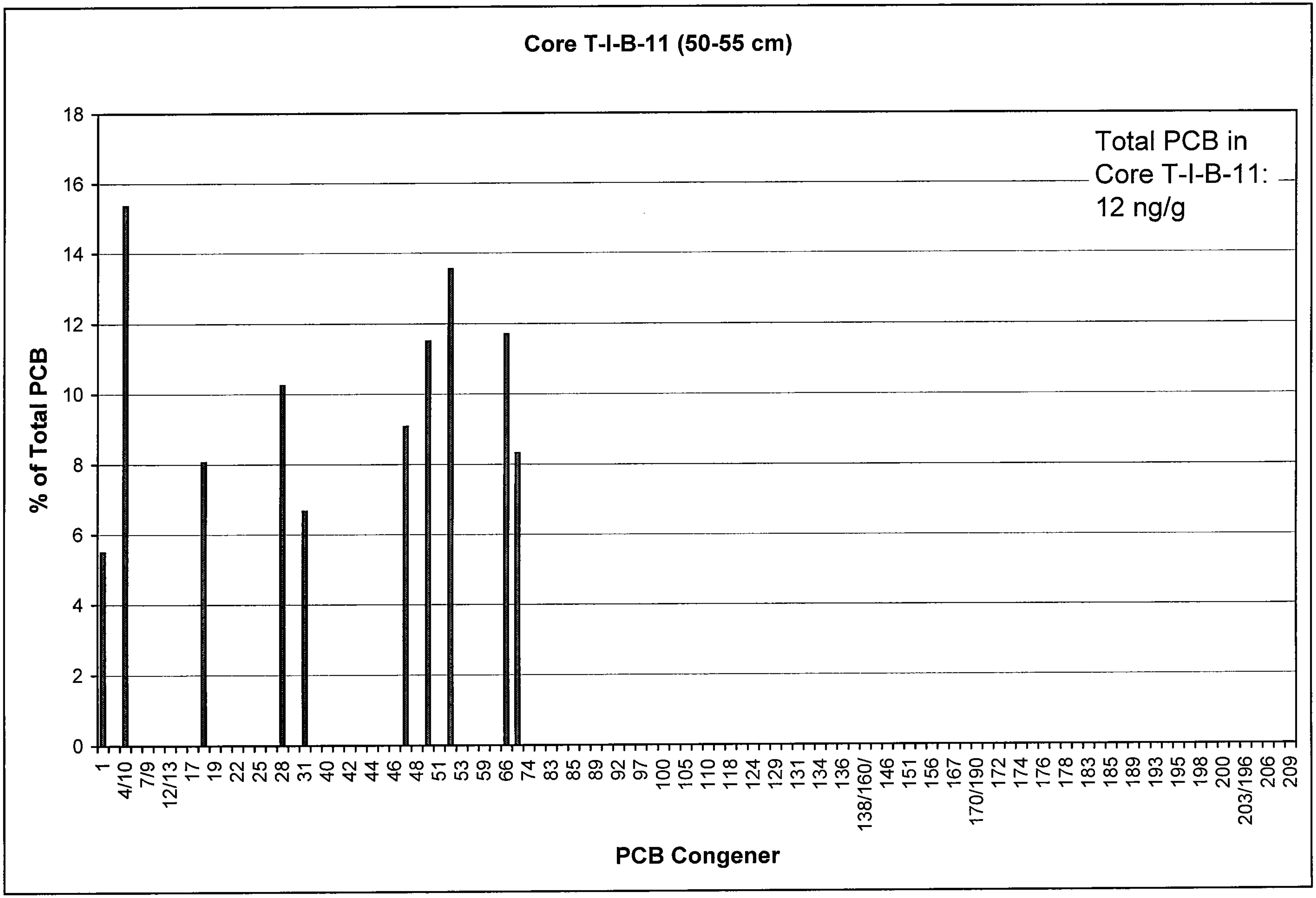


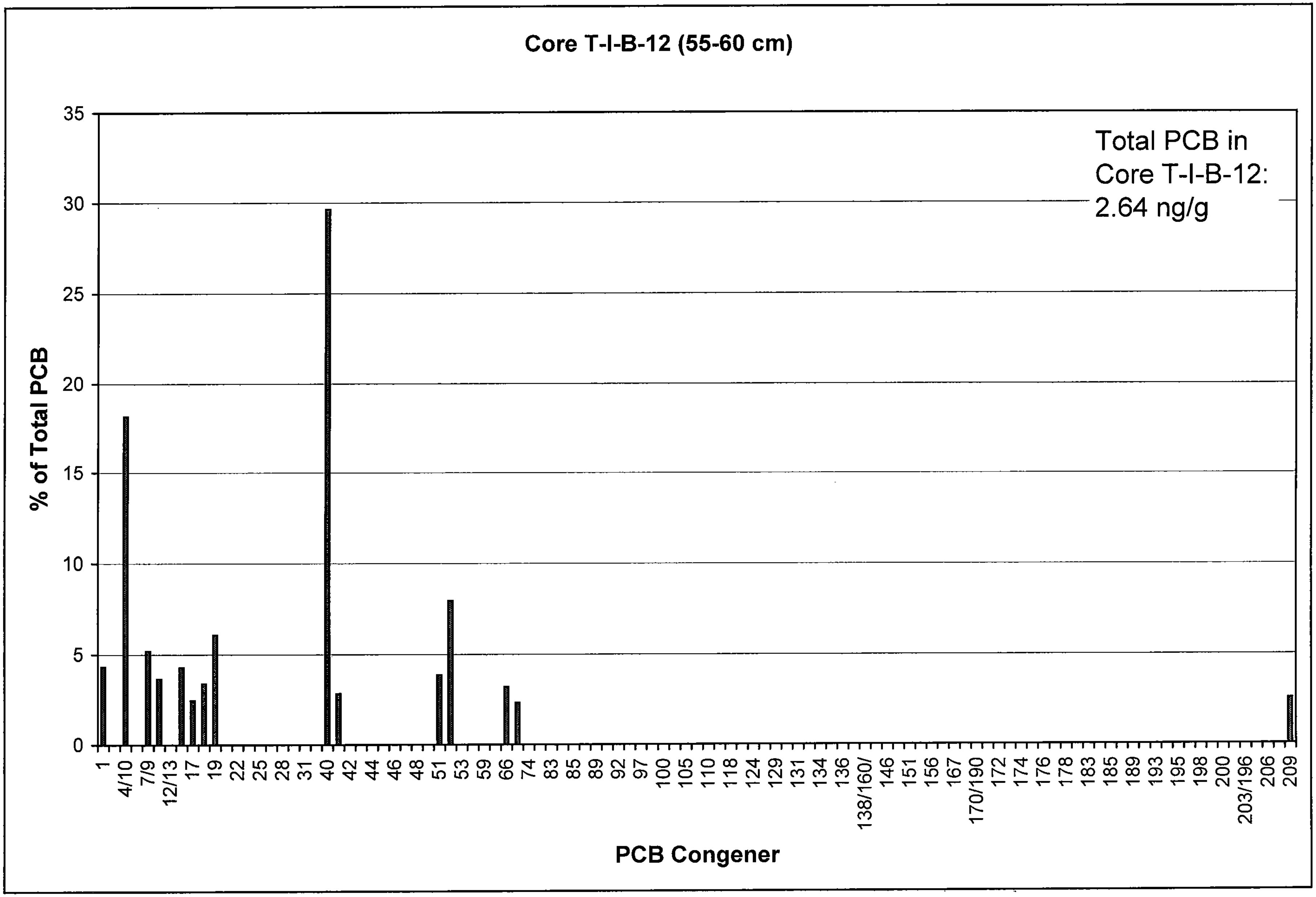
Core T-I-B-8 (35-40 cm)
Total PCB in Core T-I-B-8: 48 ng/g
% of Total PCB
30
25
20
15
10
5
0
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

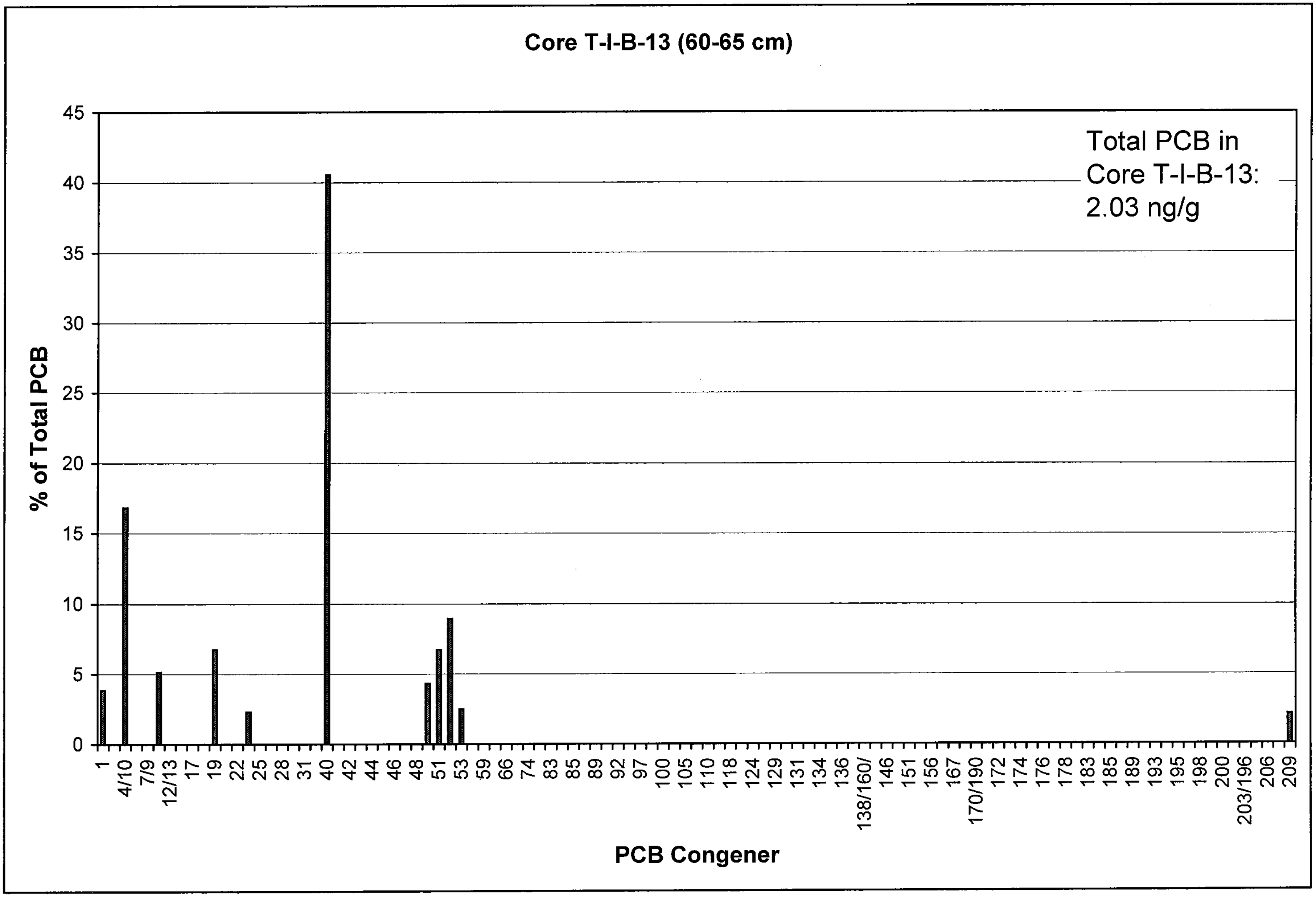


Core T-I-B-9 (40-45 cm)
Total PCB in Core T-I-B-9: 9.0 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

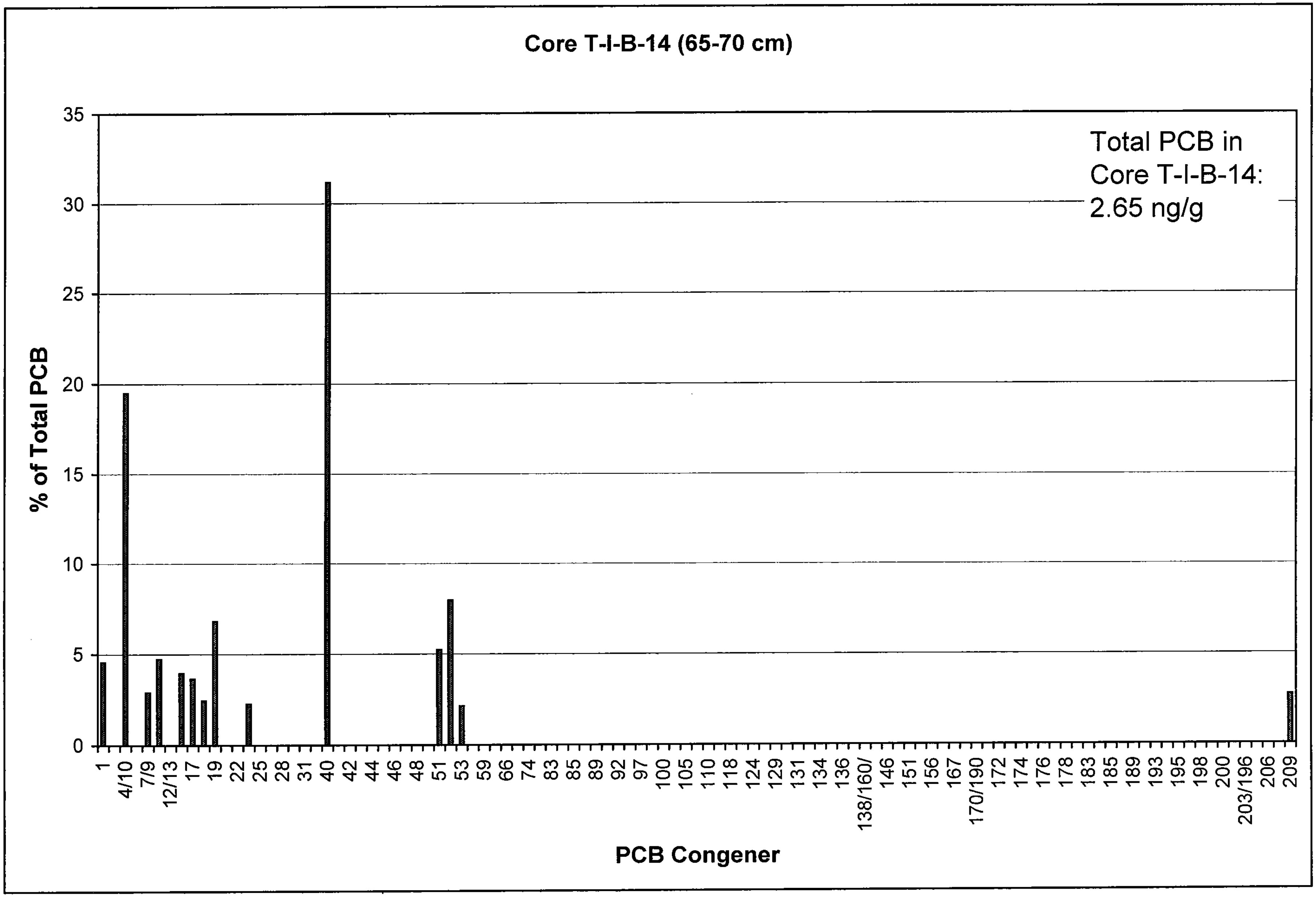

Core T-I-B-10 (45-50 cm)
Total PCB in Core T-I-B-10: 11 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
14
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209


Core T-I-B-11 (50-55 cm)
Total PCB in Core T-I-B-11: 12 ng/g
% of Total PCB
0
2
4
6
8
10
12
14
16
18
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

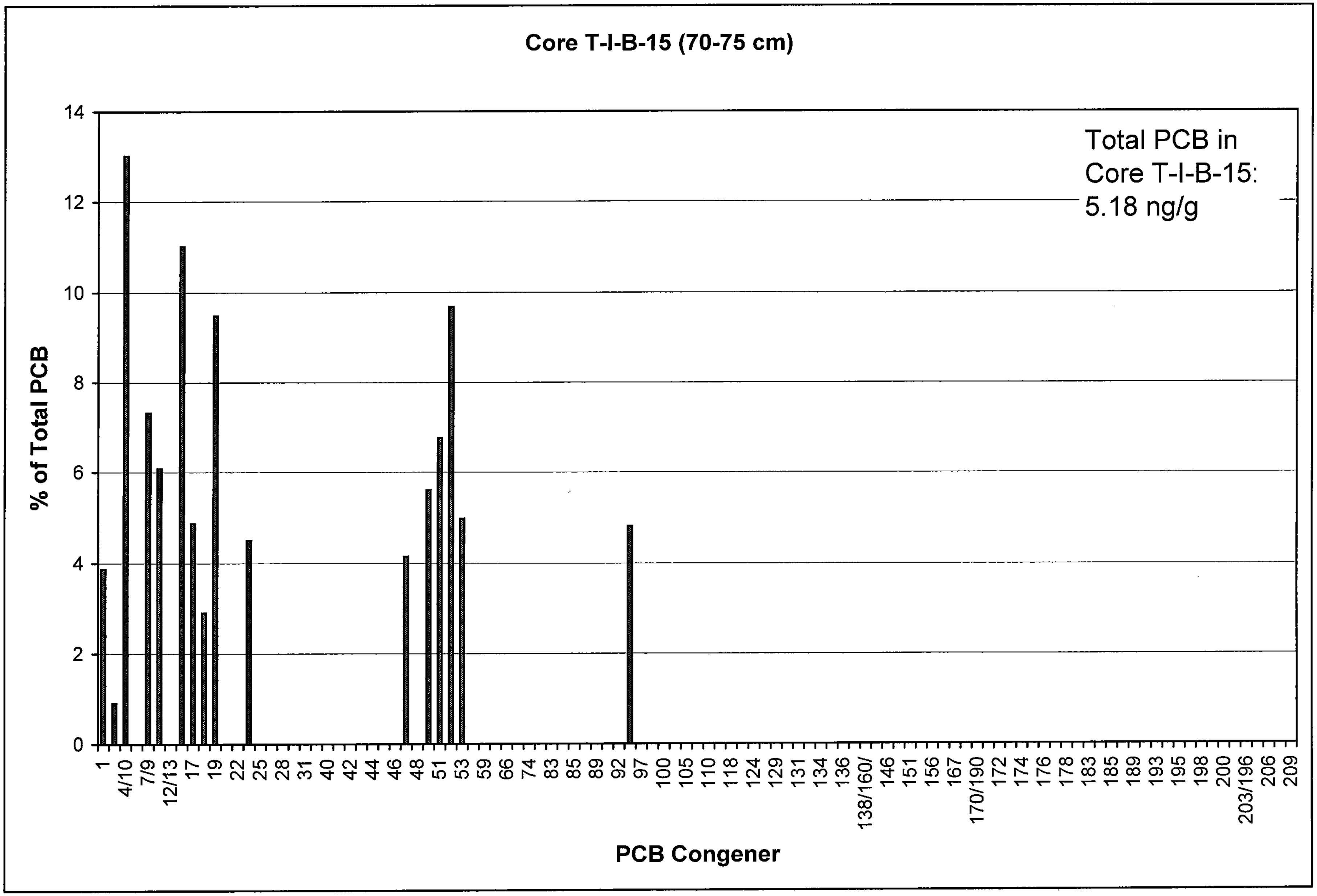

Core T-I-B-12 (55-60 cm)
Total PCB in Core T-I-B-12: 2.64 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
35
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

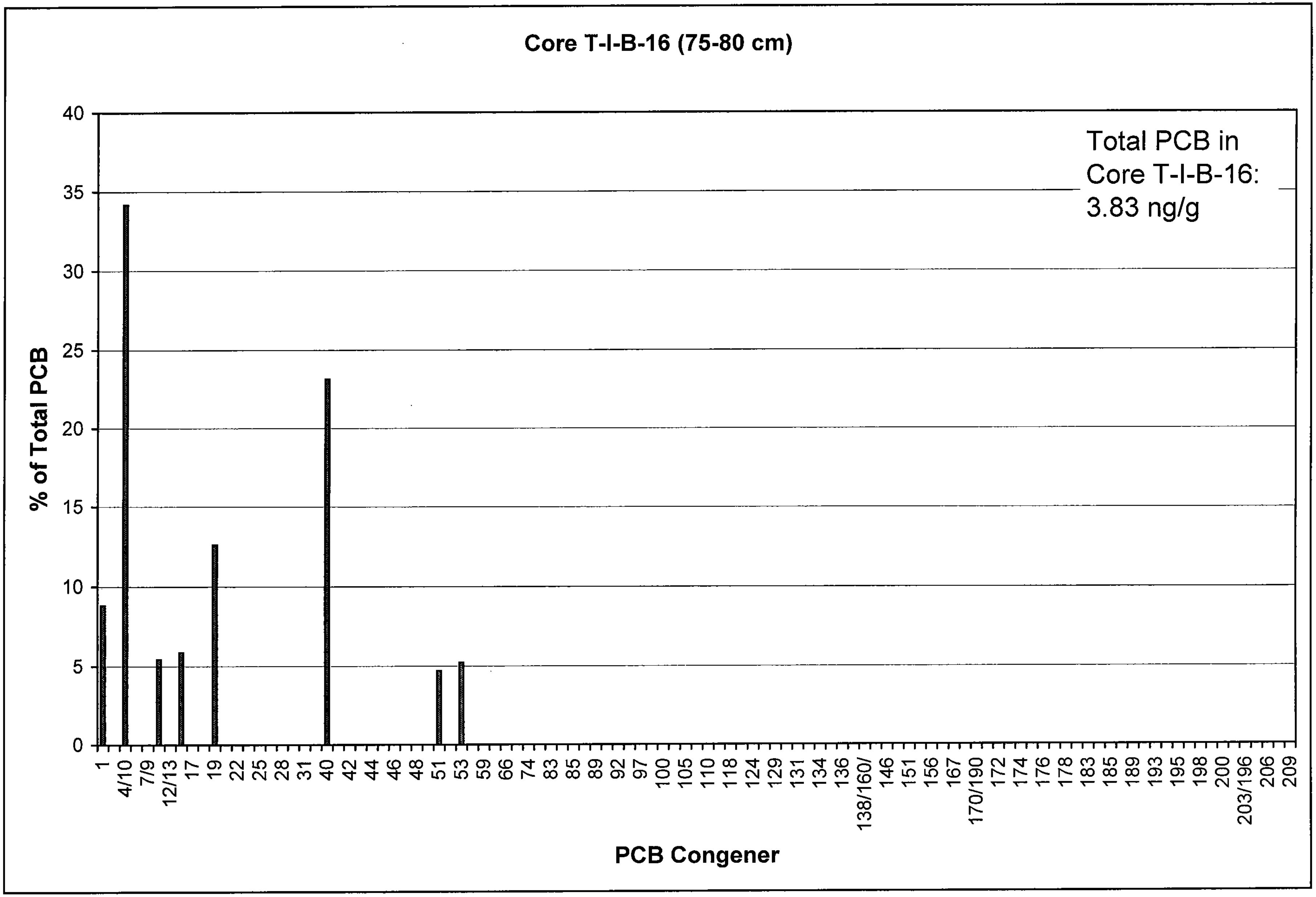


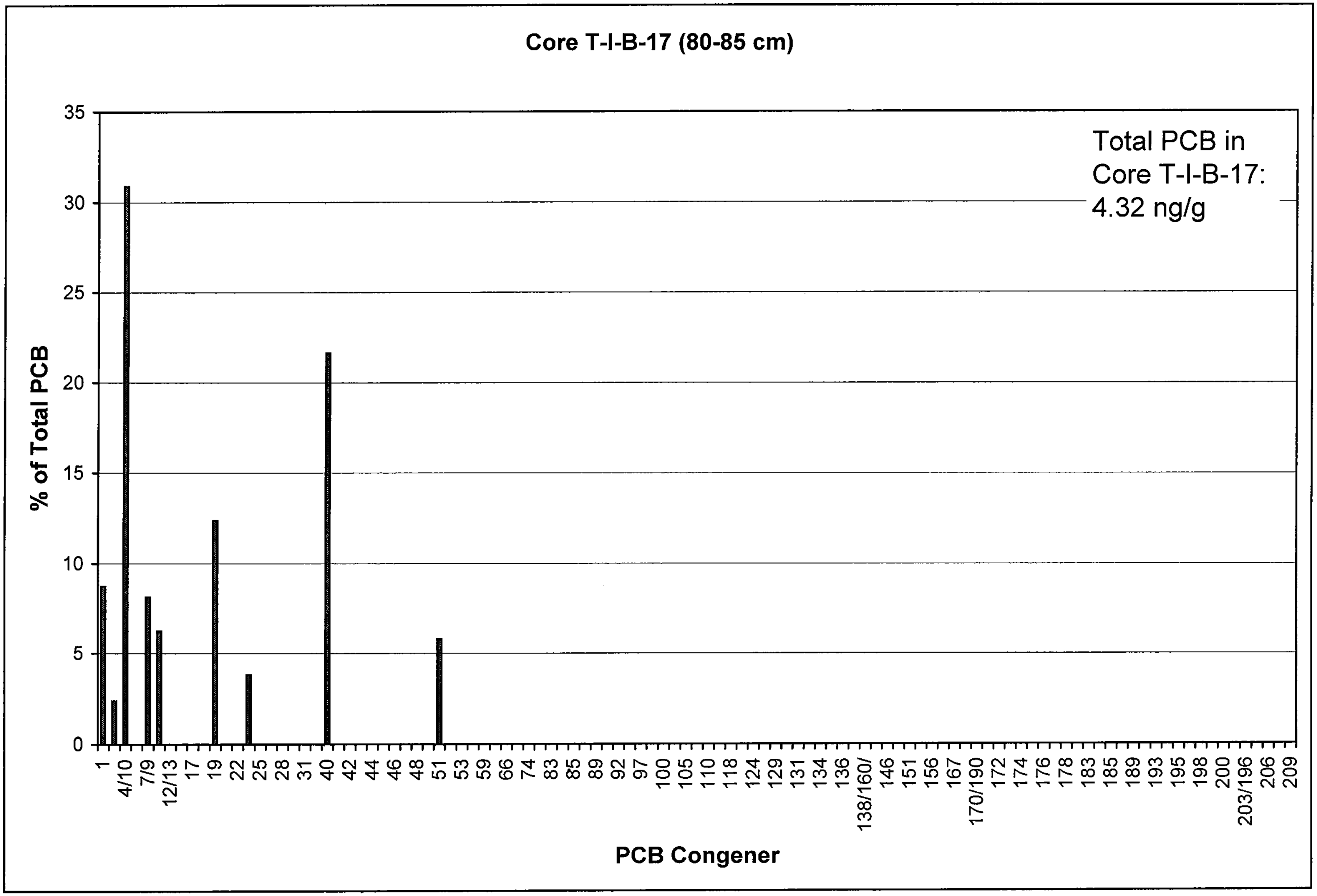
Core T-I-B-13 (60-65 cm)
Total PCB in Core T-I-B-13: 2.03 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
35
40
45
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



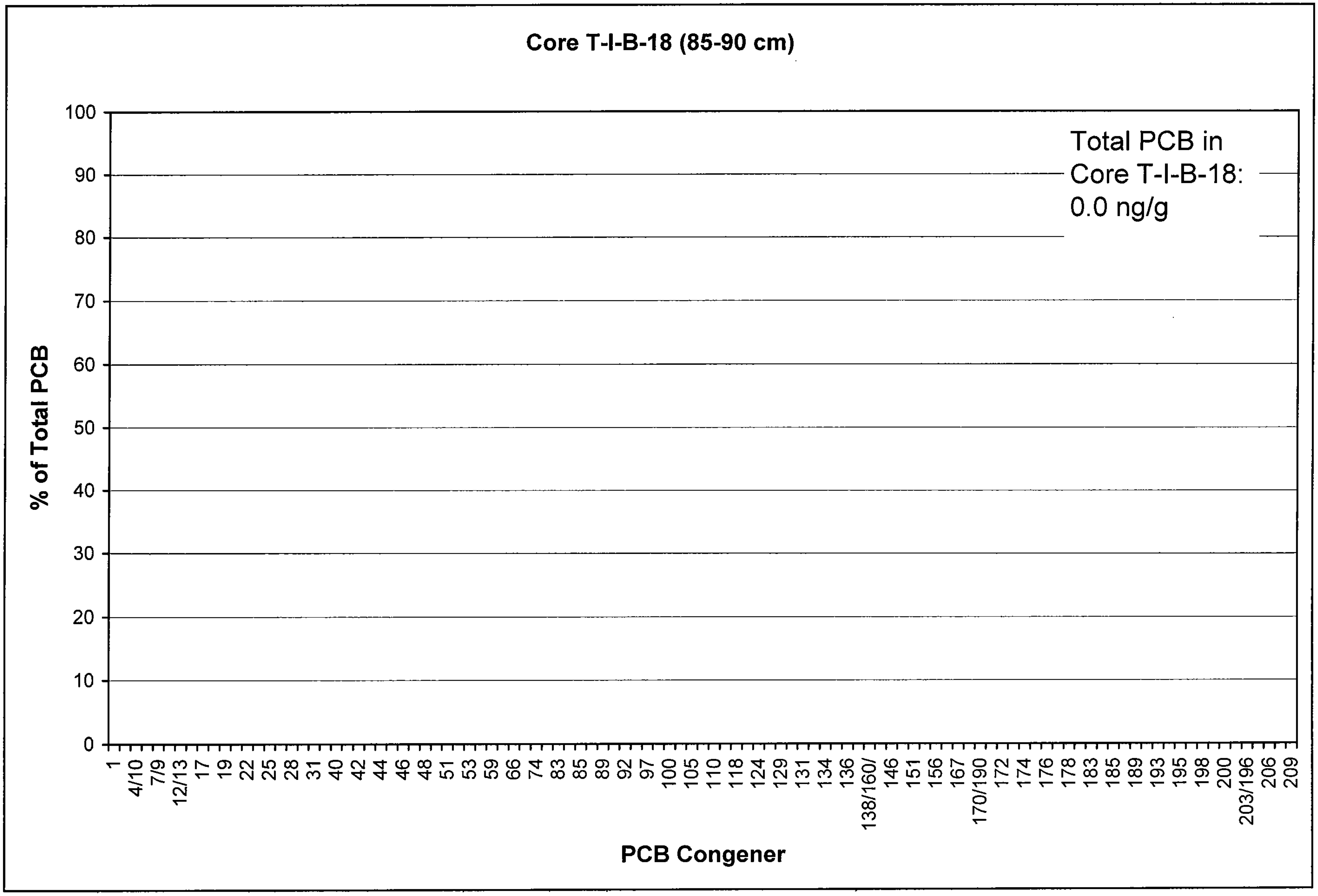
Core T-I-B-14 (65-70 cm)
Total PCB in Core T-I-B-14: 2.65 ng/g
% of Total PCB
0
5
10
15
20
25
30
35
PCB Congener
1 4/10 7/9 12/13 17 19 22 25 28 31 40 42 44 46 48 51 53 59 66 74 83 85 89 92 97 100 105 110 118 124 129 131 134 136 138/160/ 146 151 156 167 170/190 172 174 176 178 183 185 189 193 195 198 200 203/196 206 209


Core T-I-B-15 (70-75 cm)
Total PCB in Core T-I-B-15: 5.18 ng/g
% of Total PCB
0
2
4
6
8
10
12
14
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

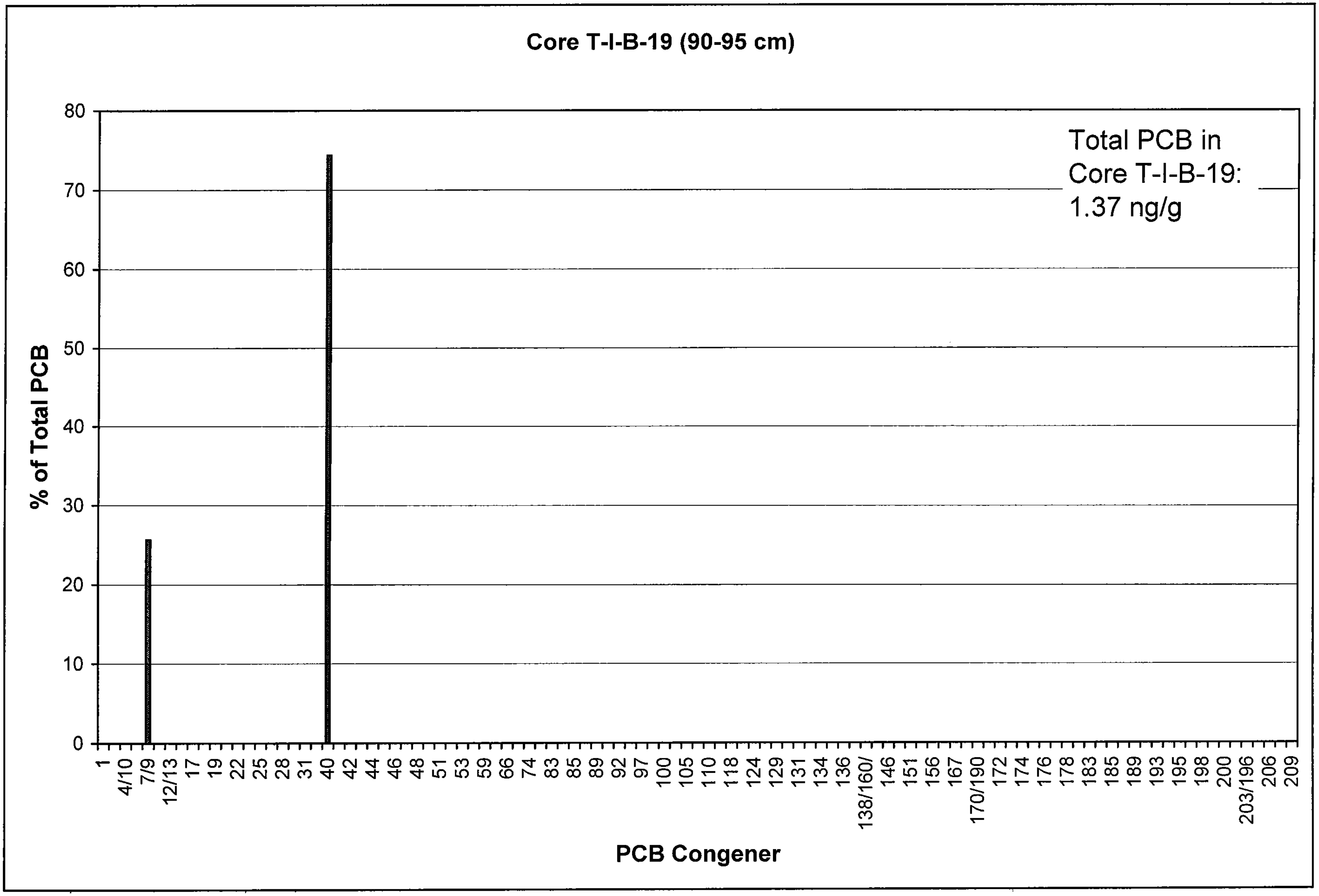

Core T-I-B-16 (75-80 cm)
Total PCB in Core T-I-B-16: 3.83 ng/g
% of Total PCB
0
5
10
15
20
25
30
35
40
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener



Core T-I-B-17 (80-85 cm)
Total PCB in Core T-I-B-17: 4.32 ng/g
% of Total PCB
0
5
10
15
20
25
30
35
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener



Core T-I-B-18 (85-90 cm)
Total PCB in Core T-I-B-18: 0.0 ng/g
% of Total PCB
0
10
20
30
40
50
60
70
80
90
100
PCB Congener
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209


Core T-I-B-19 (90-95 cm)
Total PCB in Core T-I-B-19: 1.37 ng/g
% of Total PCB
PCB Congener
0
10
20
30
40
50
60
70
80
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
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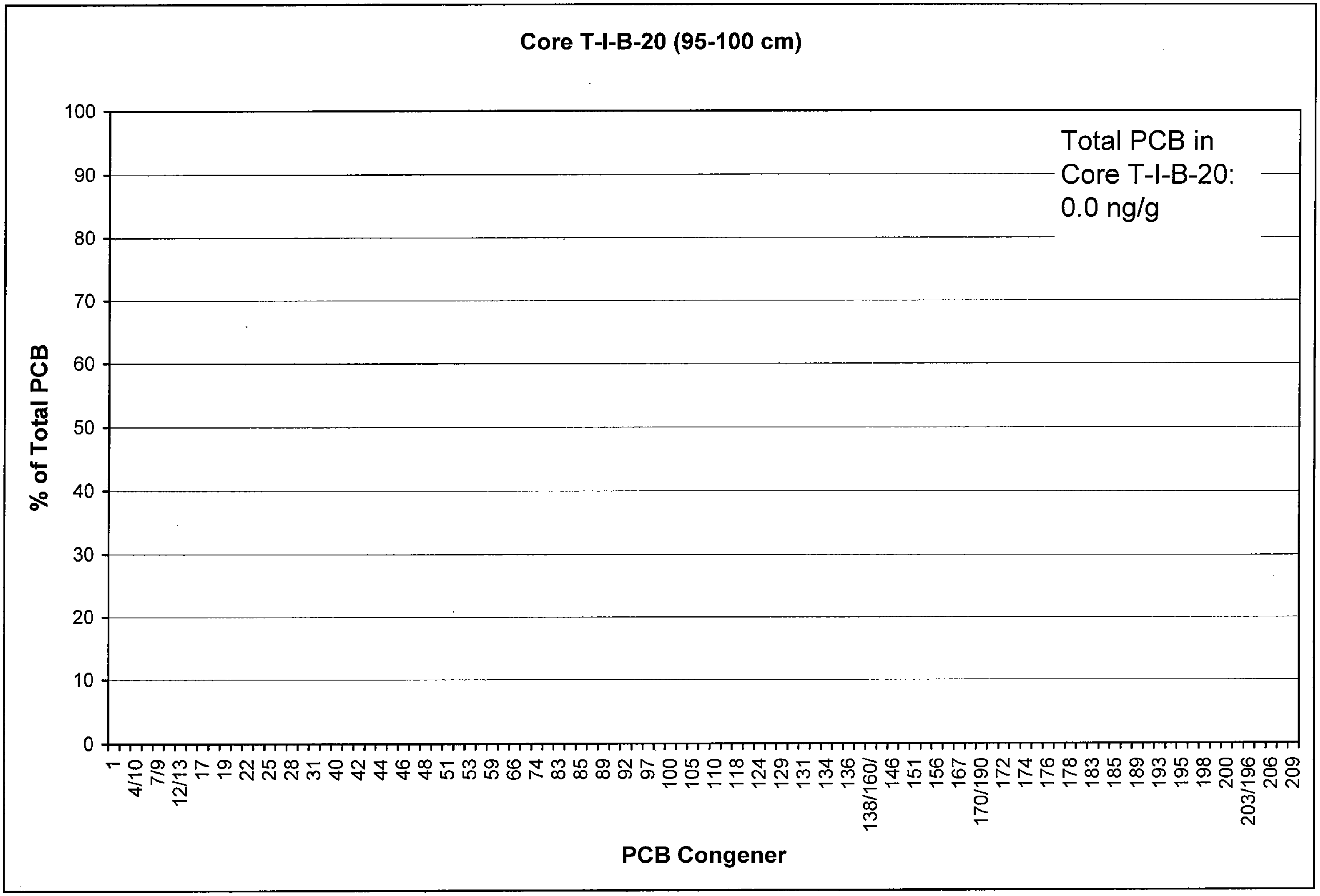
193
195
198
200
203/196
206
209



Core T-I-B-20 (95-100 cm)
Total PCB in Core T-I-B-20: 0.0 ng/g
% of Total PCB
PCB Congener
0
10
20
30
40
50
60
70
80
90
100
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
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193
195
198
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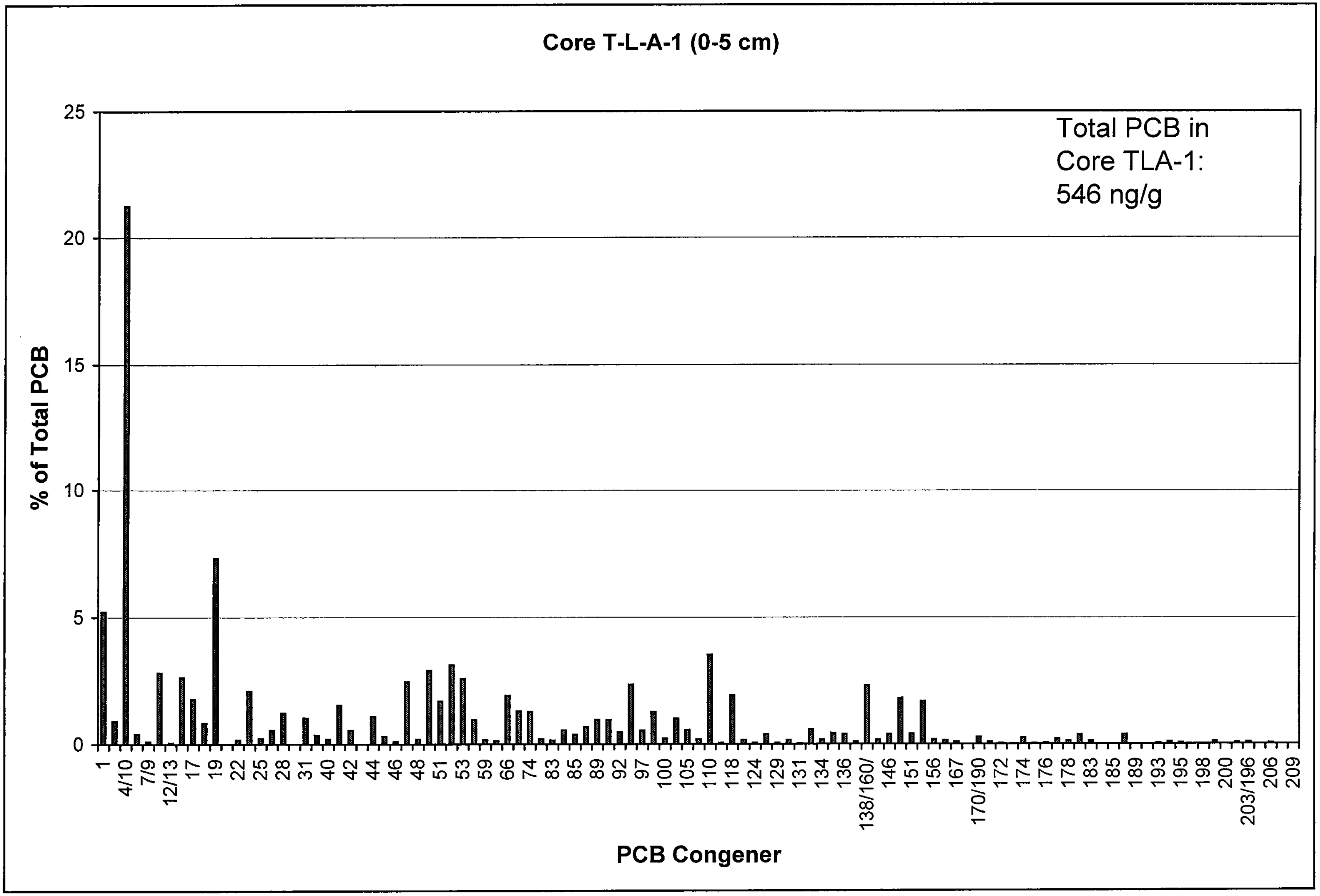
203/196
206
209



Core T-L-A-1 (0-5 cm)
Total PCB in Core TLA-1: 546 ng/g
% of Total PCB
0
5
10
15
20
25
PCB Congener
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
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100
105
110
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124
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131
134
136
138/160/
146
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156
167
170/190
172
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198
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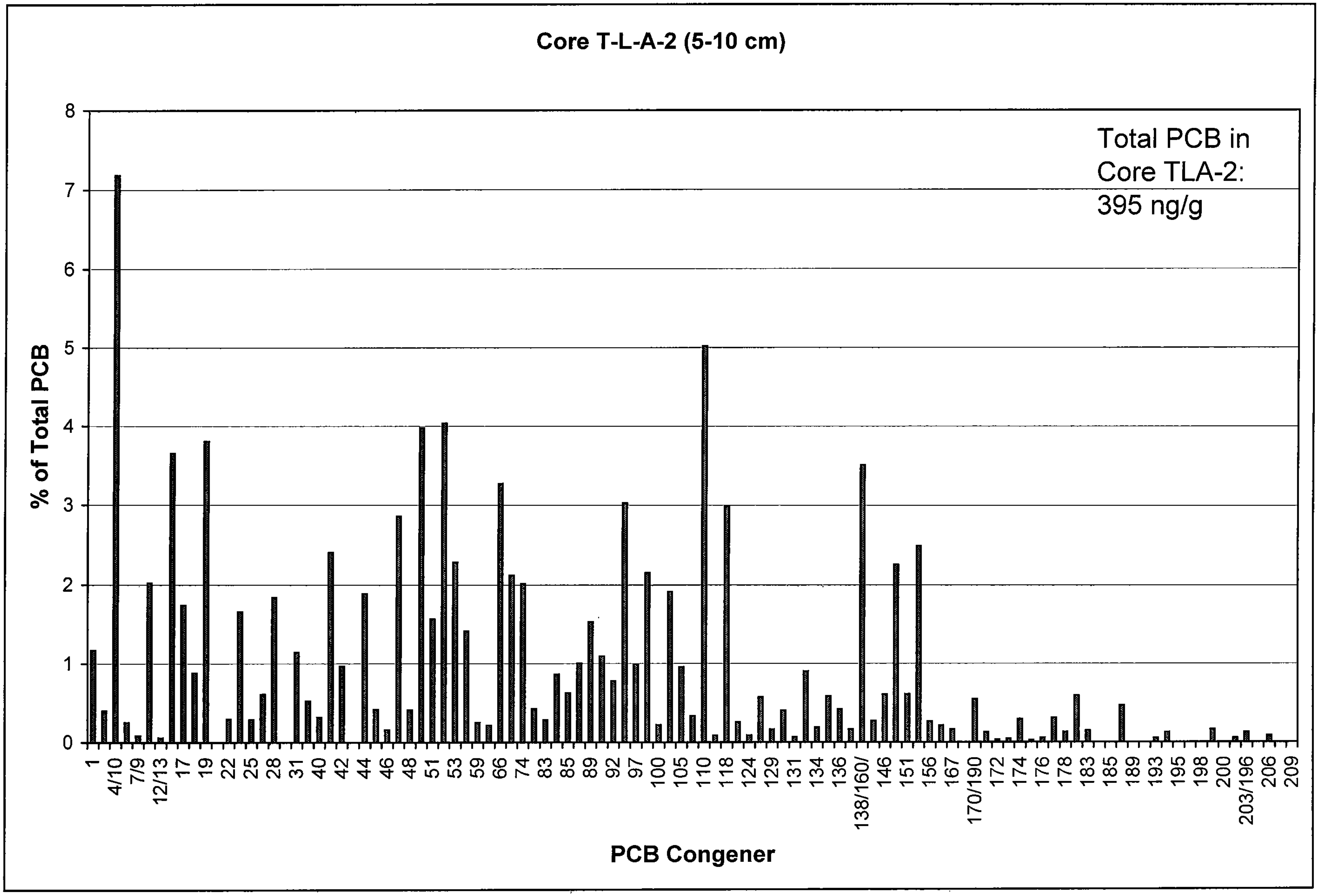
203/196
206
209



Core T-L-A-2 (5-10 cm)
Total PCB in Core TLA-2: 395 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
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170/190
172
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176
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198
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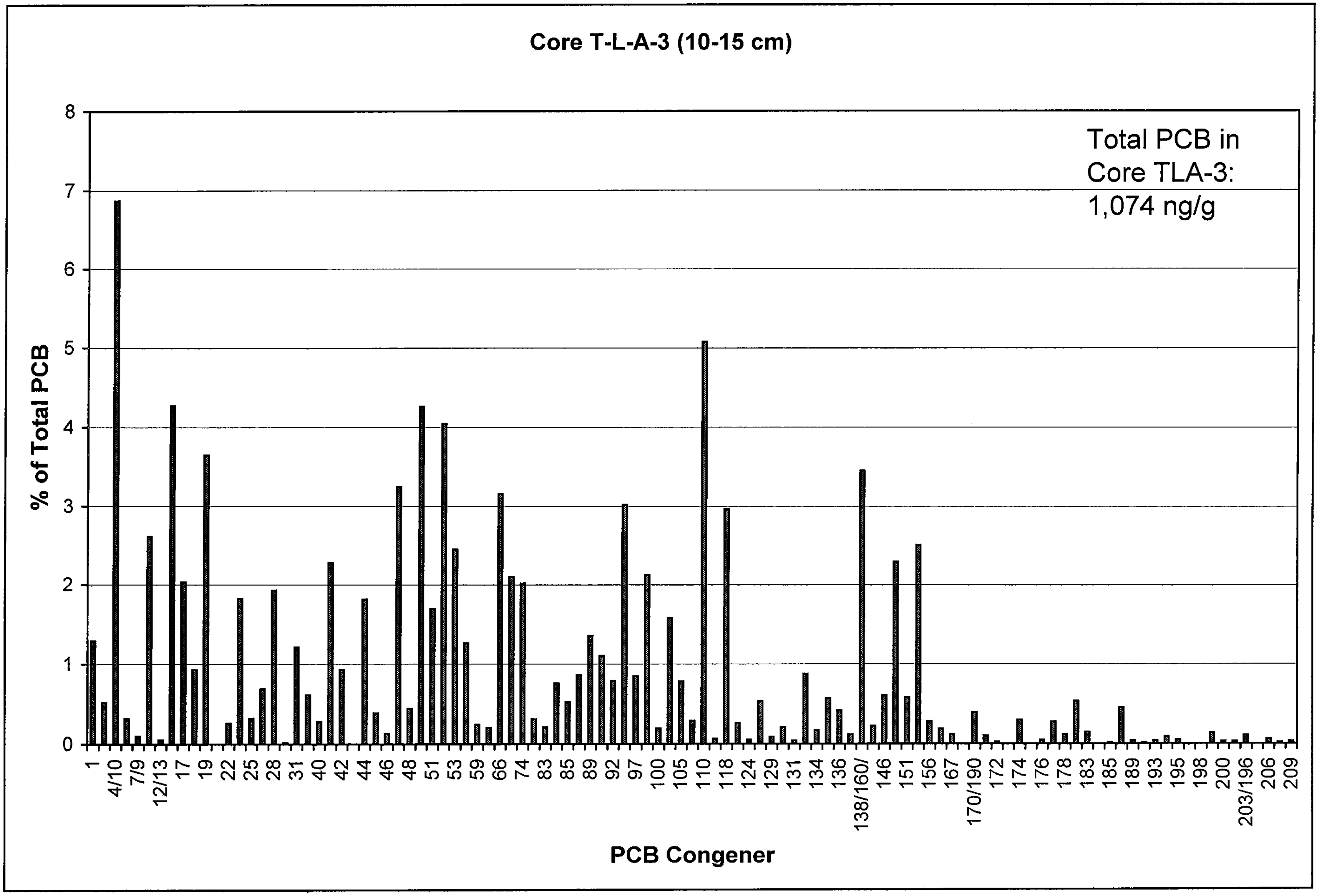
203/196
206
209


Core T-L-A-3 (10-15 cm)
Total PCB in Core TLA-3: 1,074 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
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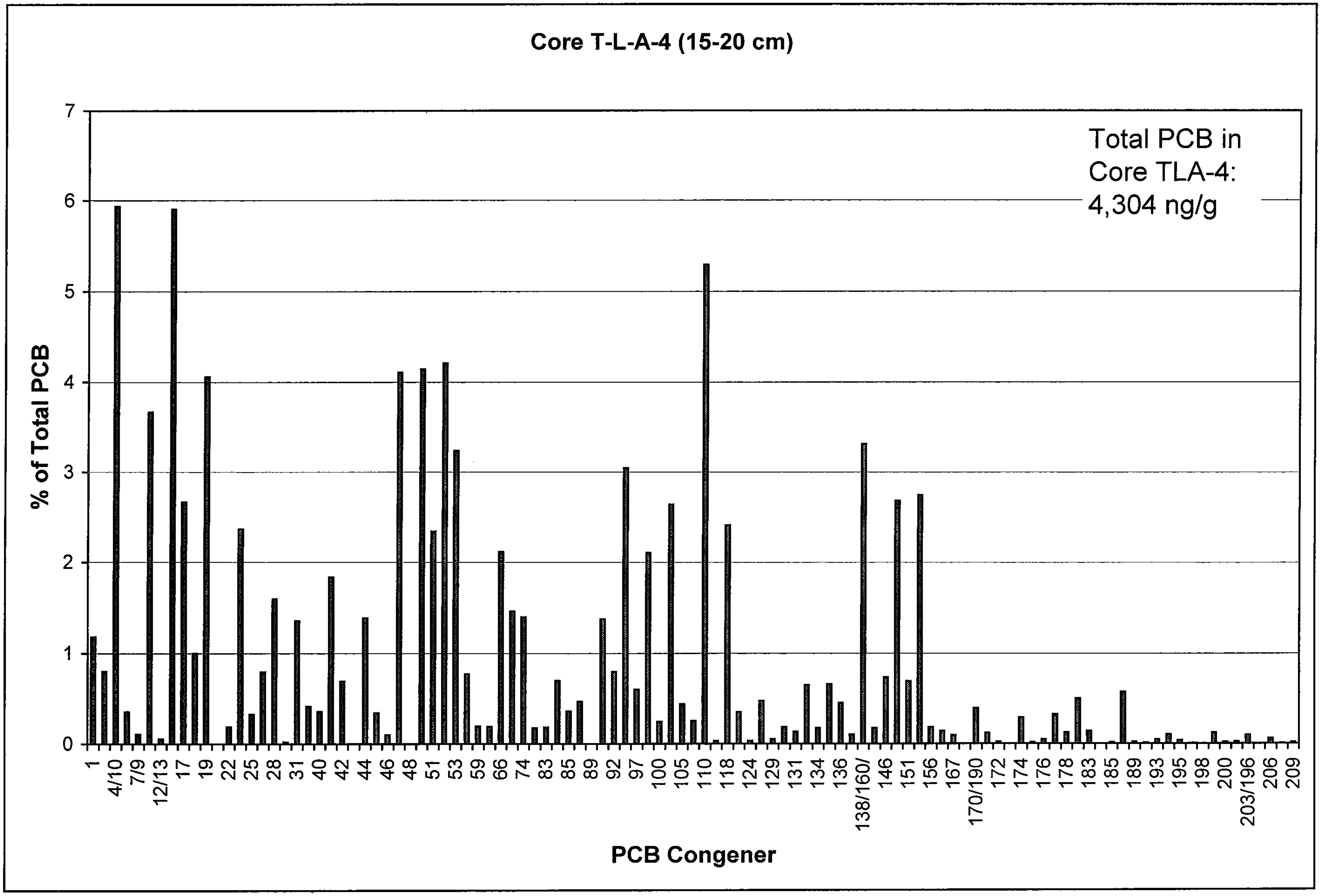
193
195
198
200
203/196
206
209



Core T-L-A-4 (15-20 cm)
Total PCB in
Core TLA-4:
4,304 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
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178
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198
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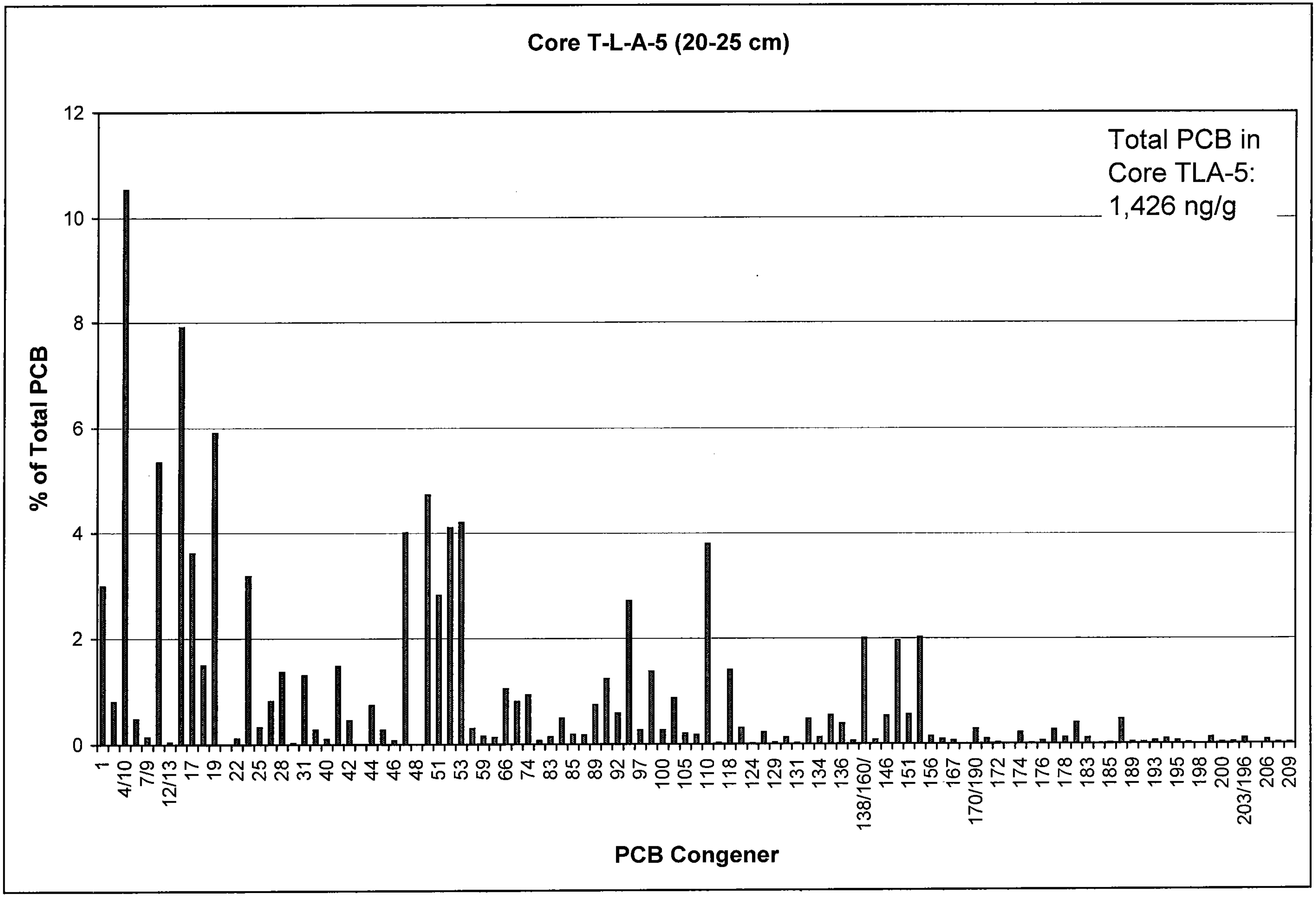
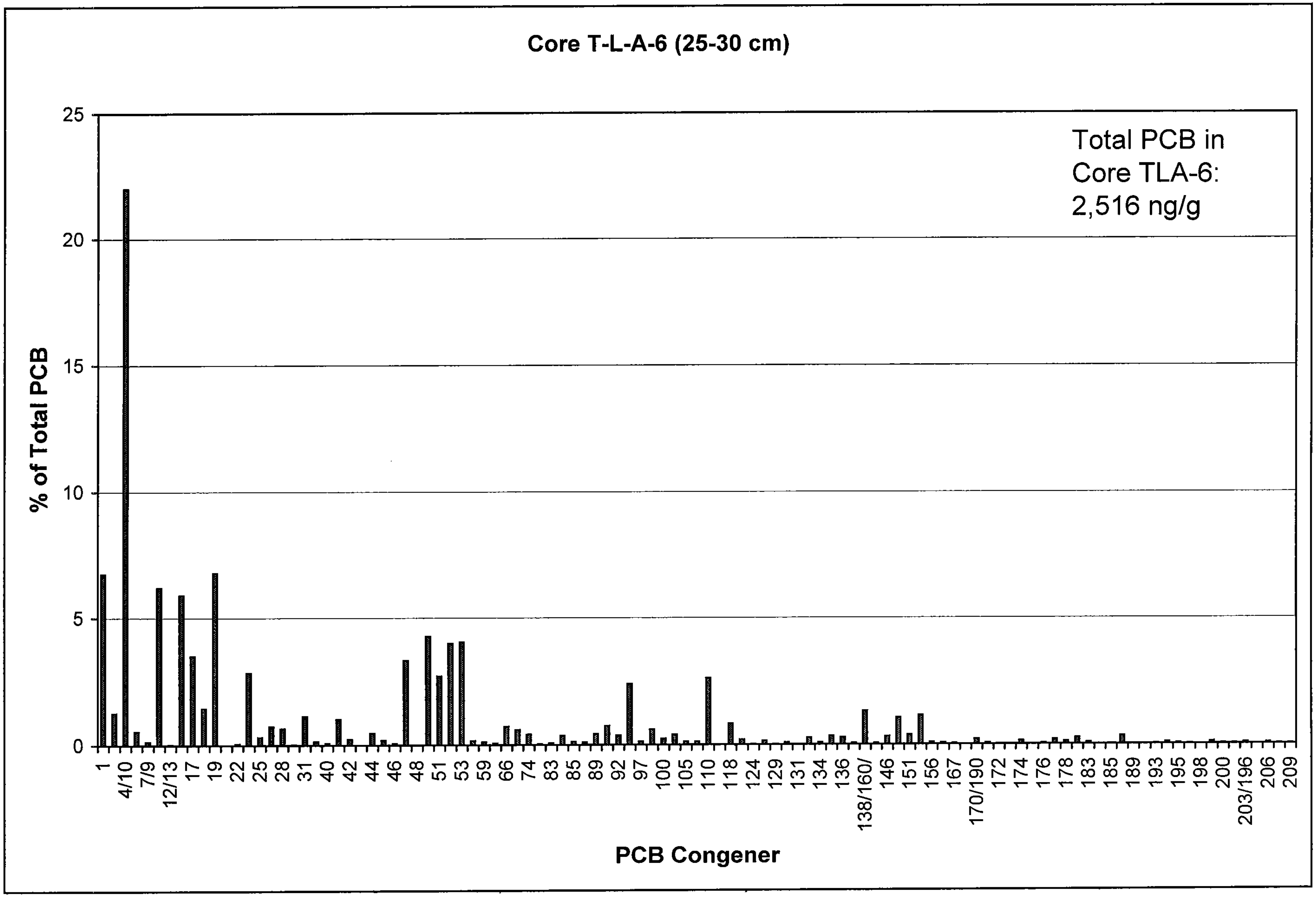
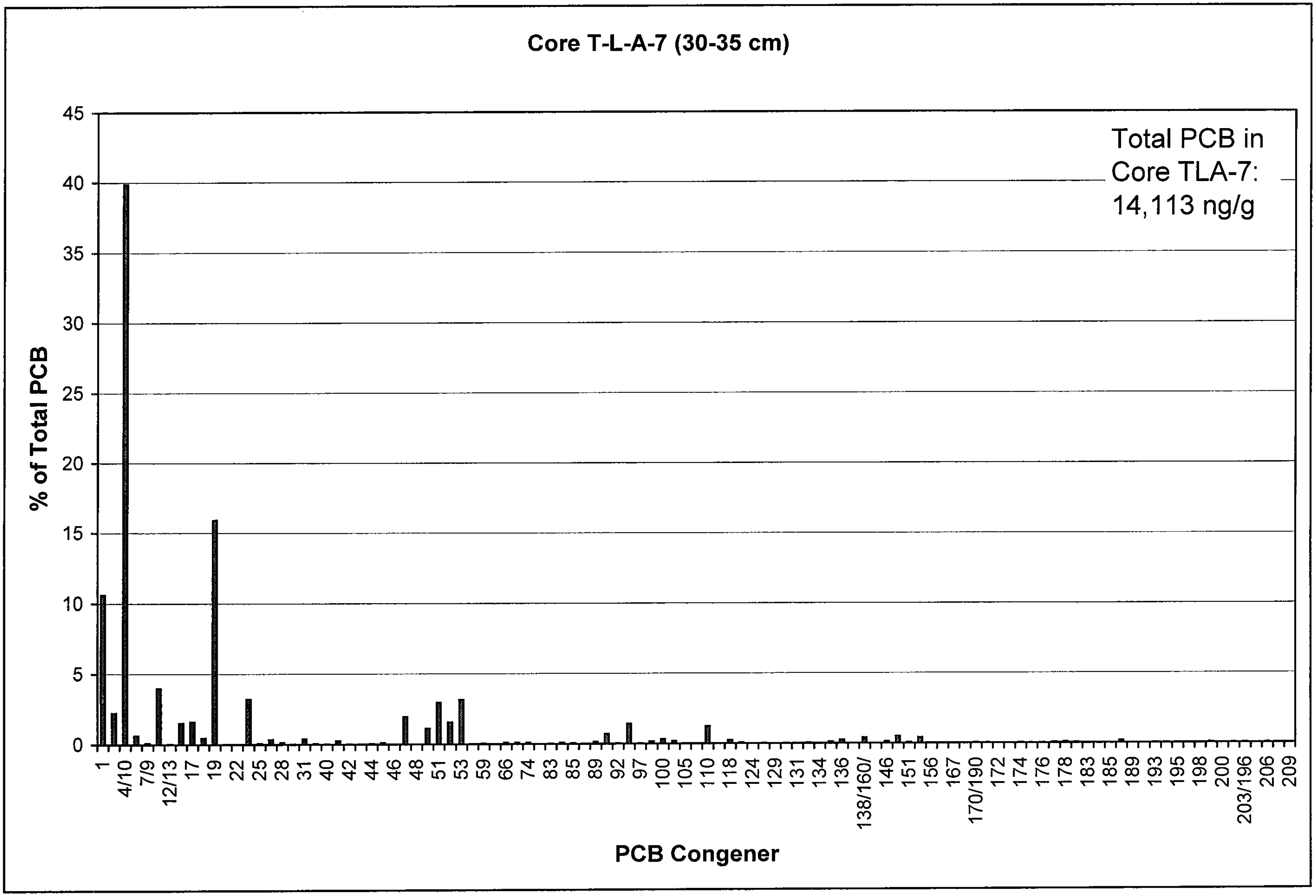
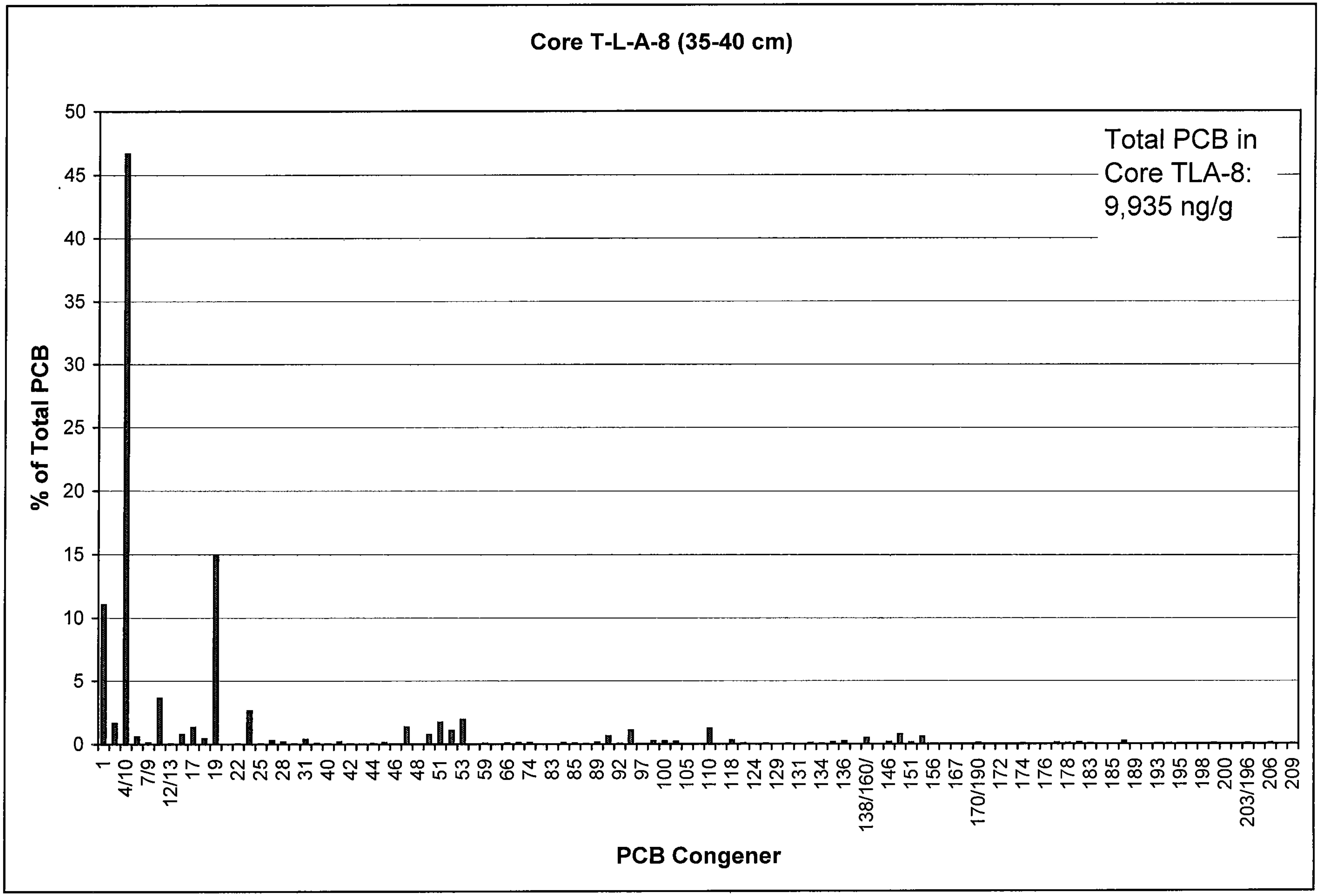
203/196
206
209

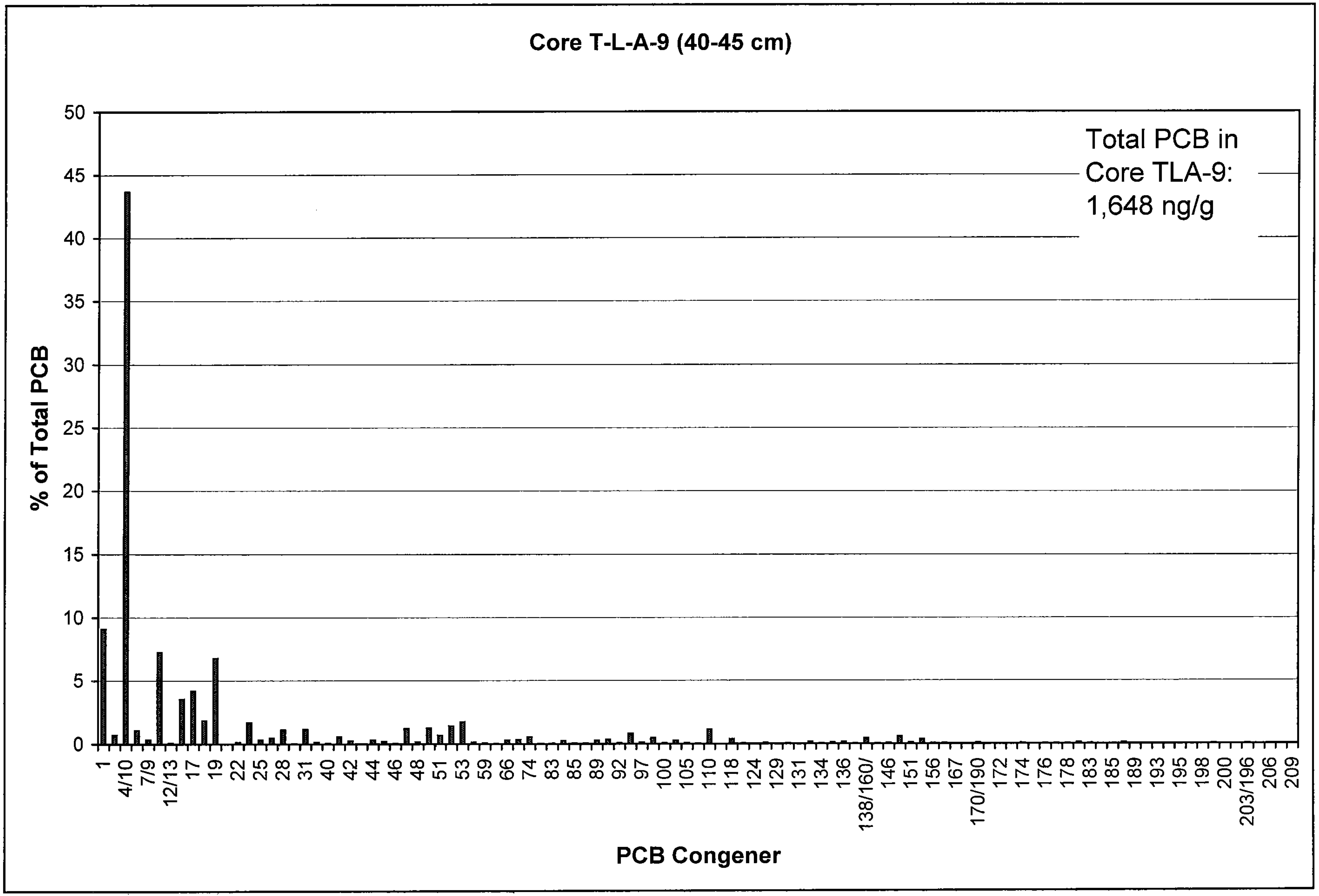

Core T-L-A-5 (20-25 cm)
Total PCB in Core TLA-5: 1,426 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



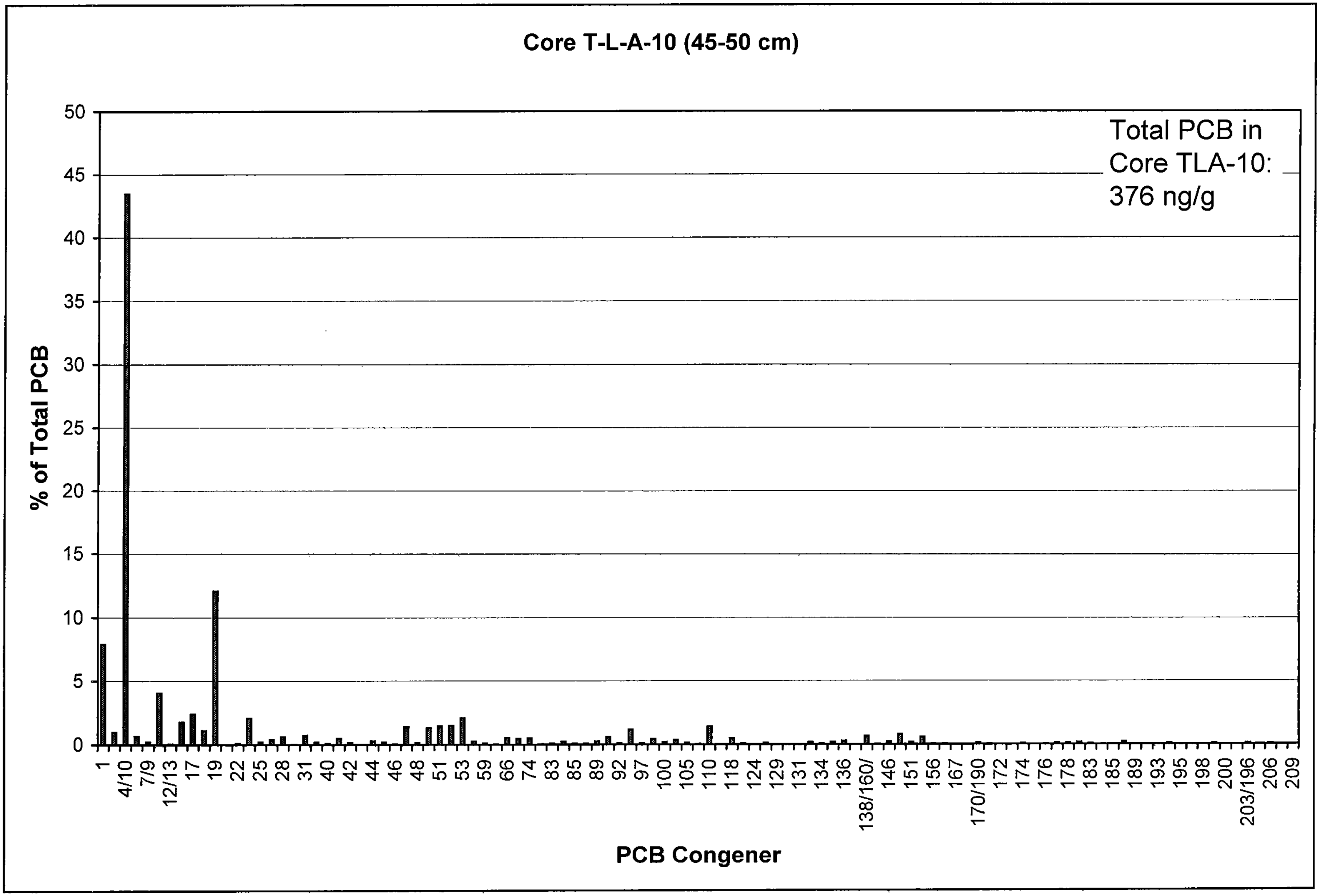
Core T-L-A-6 (25-30 cm)
Total PCB in
Core TLA-6:
2,516 ng/g
% of Total PCB
0
5
10
15
20
25
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

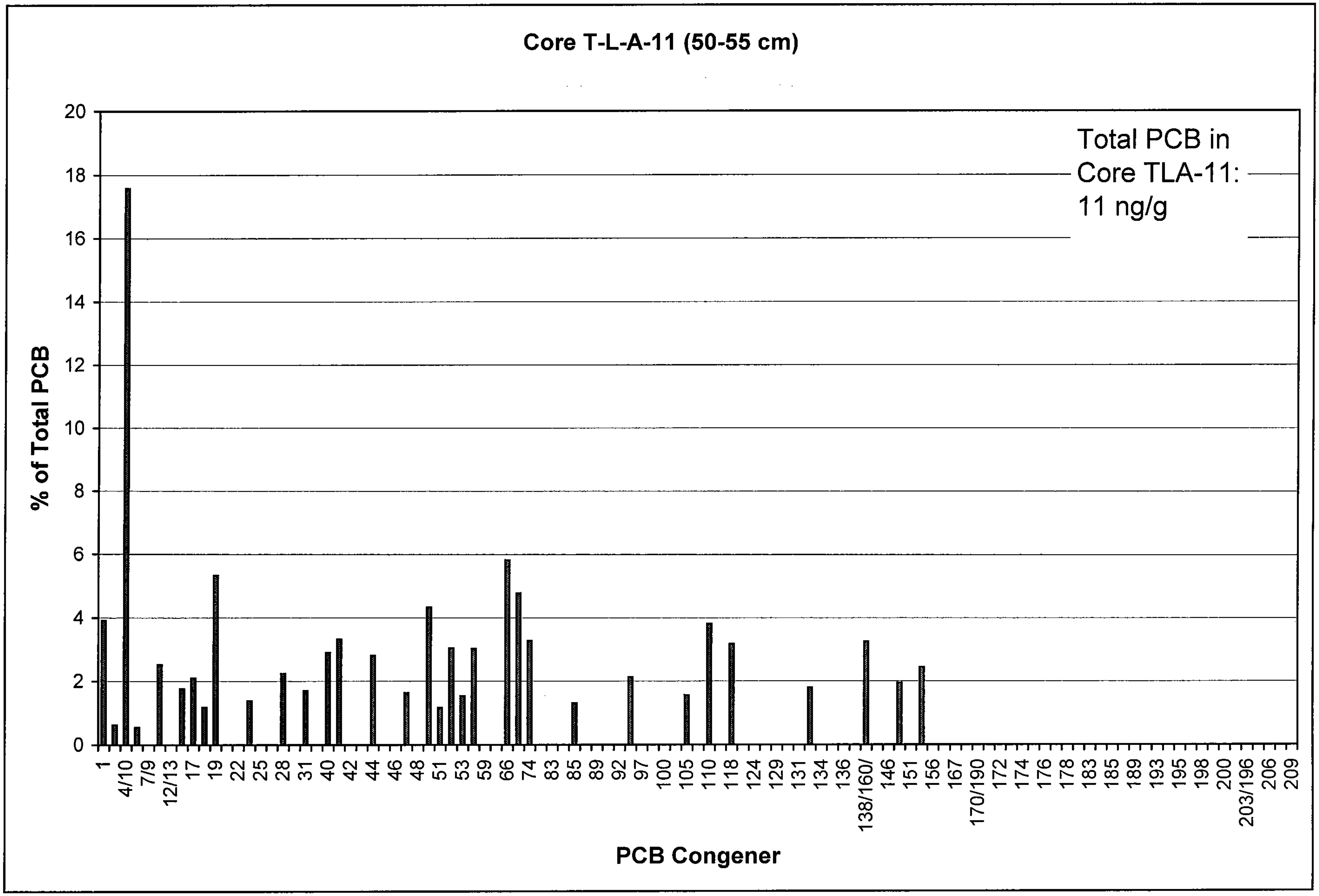

Core T-L-A-7 (30-35 cm)
Total PCB in Core TLA-7: 14,113 ng/g
% of Total PCB
0
5
10
15
20
25
30
35
40
45
PCB Congener
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209


Core T-L-A-8 (35-40 cm)
Total PCB in Core TLA-8: 9,935 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
35
40
45
50
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

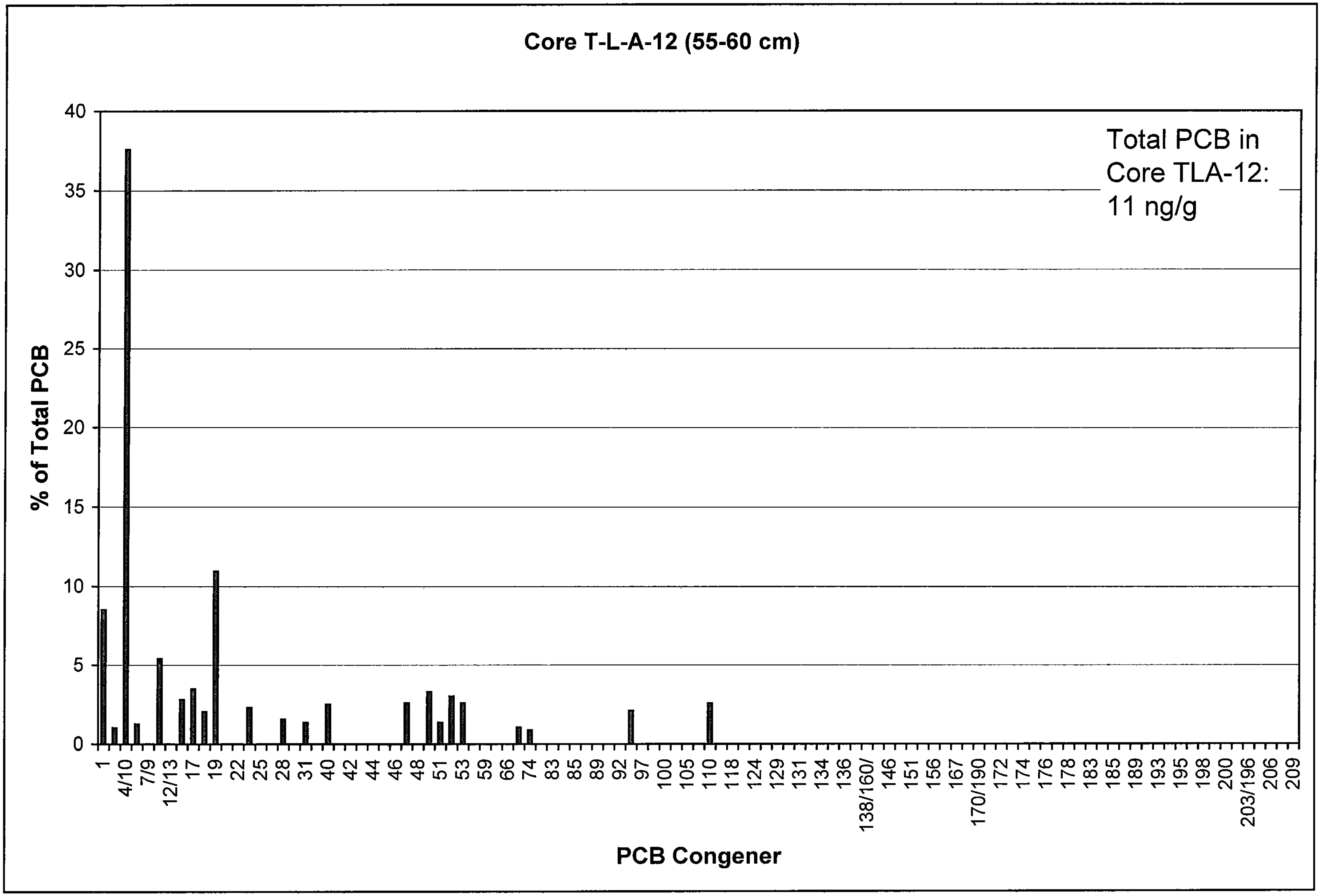


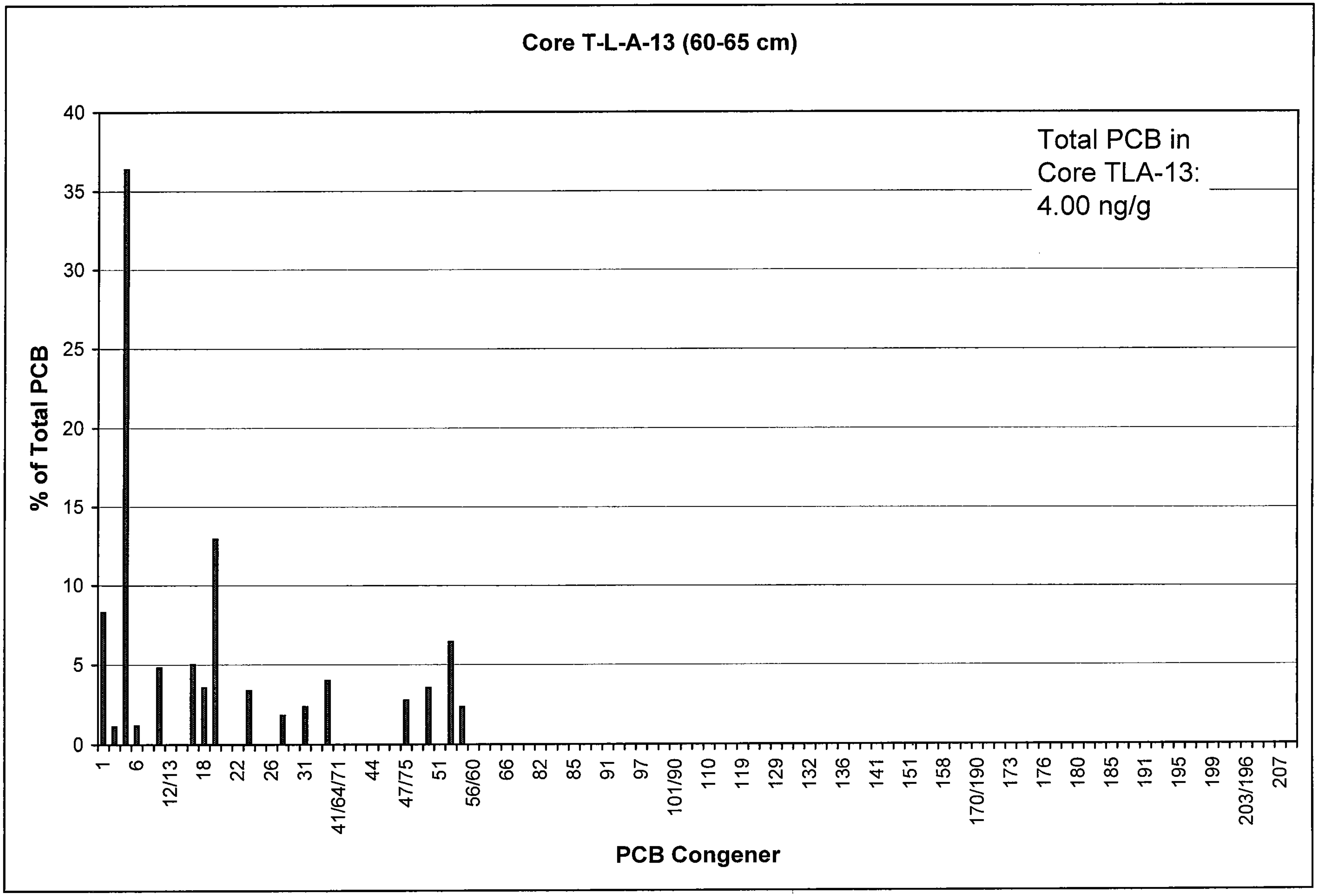
Core T-L-A-9 (40-45 cm)
Total PCB in Core TLA-9: 1,648 ng/g
% of Total PCB
50
45
40
35
30
25
20
15
10
5
0
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener


Core T-L-A-10 (45-50 cm)
Total PCB in Core TLA-10: 376 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
35
40
45
50
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

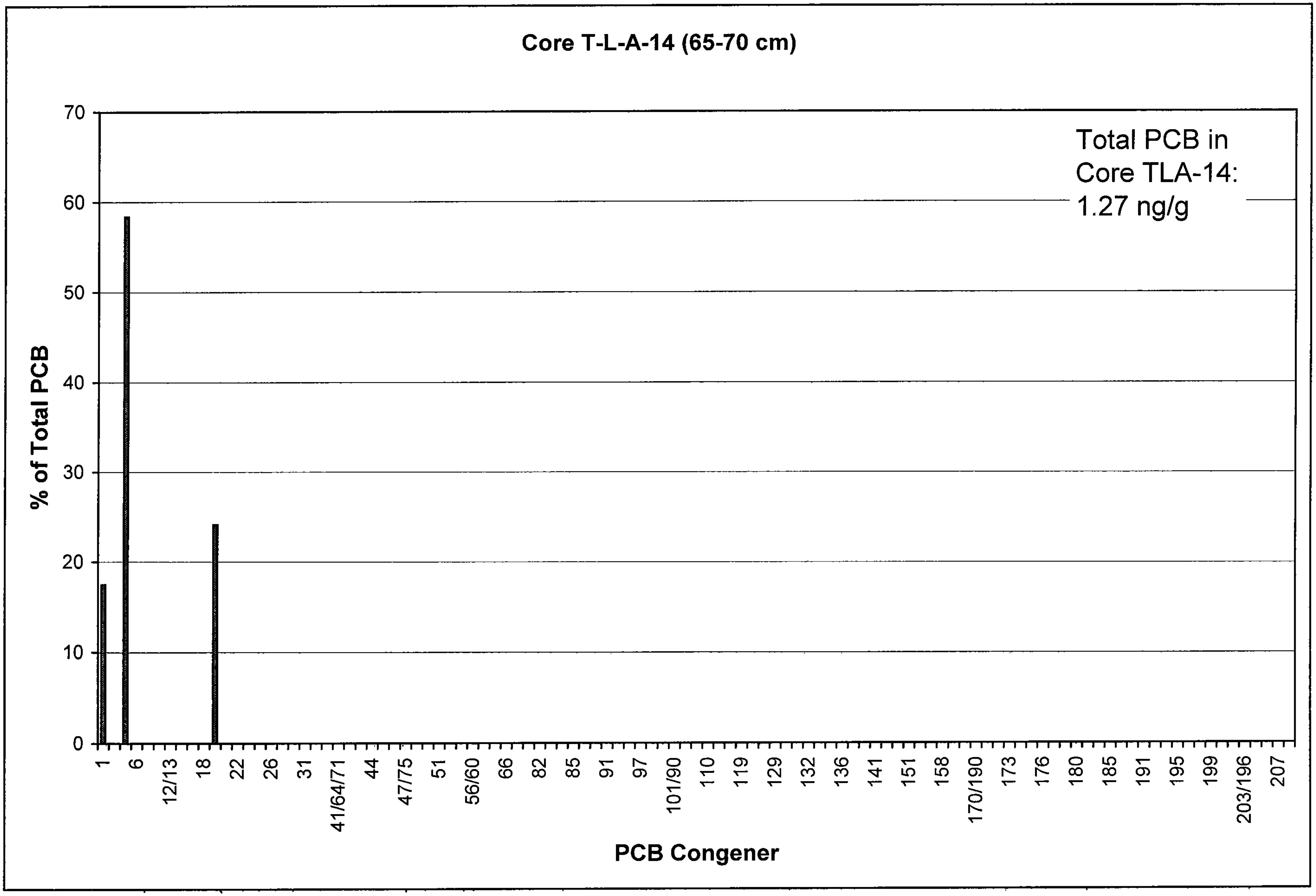


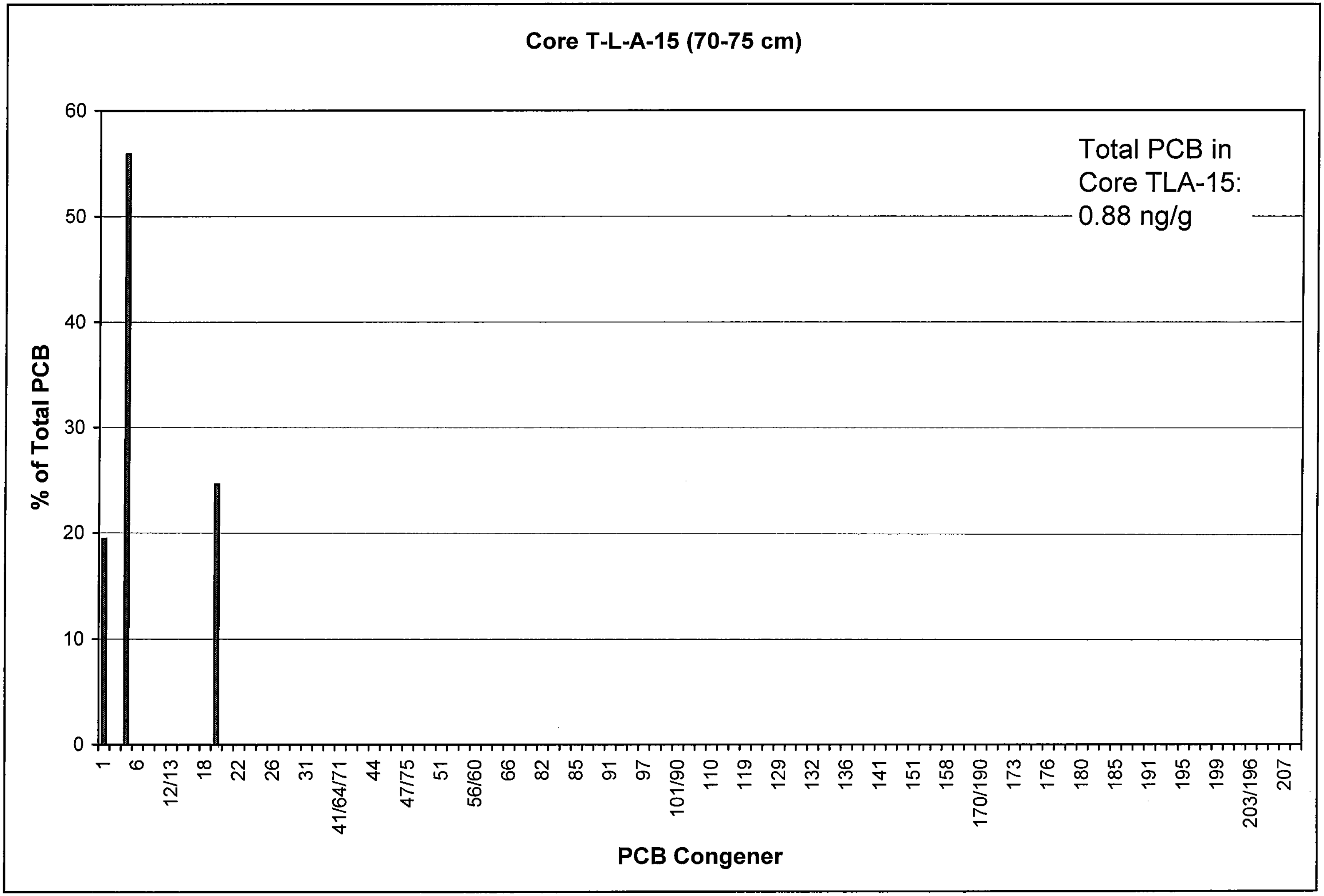
Core T-L-A-11 (50-55 cm)
Total PCB in Core TLA-11: 11 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
14
16
18
20
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209


Core T-L-A-12 (55-60 cm)
Total PCB in Core TLA-12: 11 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
35
40
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

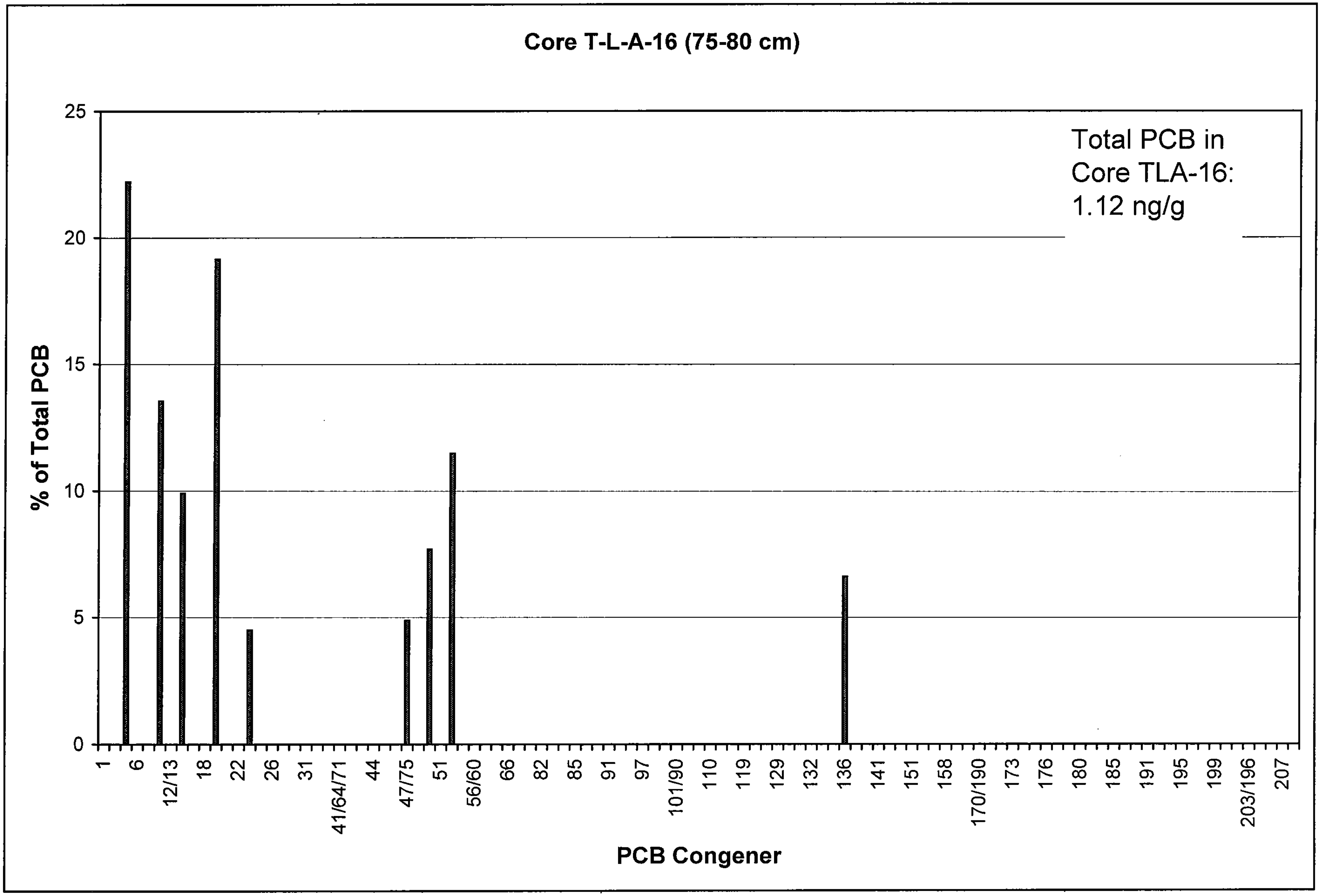


Core T-L-A-13 (60-65 cm)
Total PCB in
Core TLA-13:
4.00 ng/g
% of Total PCB
0
5
10
15
20
25
30
35
40
1
6
12/13
18
22
26
31
41/64/71
44
47/75
51
56/60
66
82
85
91
97
101/90
110
119
129
132
136
141
151
158
170/190
173
176
180
185
191
195
199
203/196
207
PCB Congener

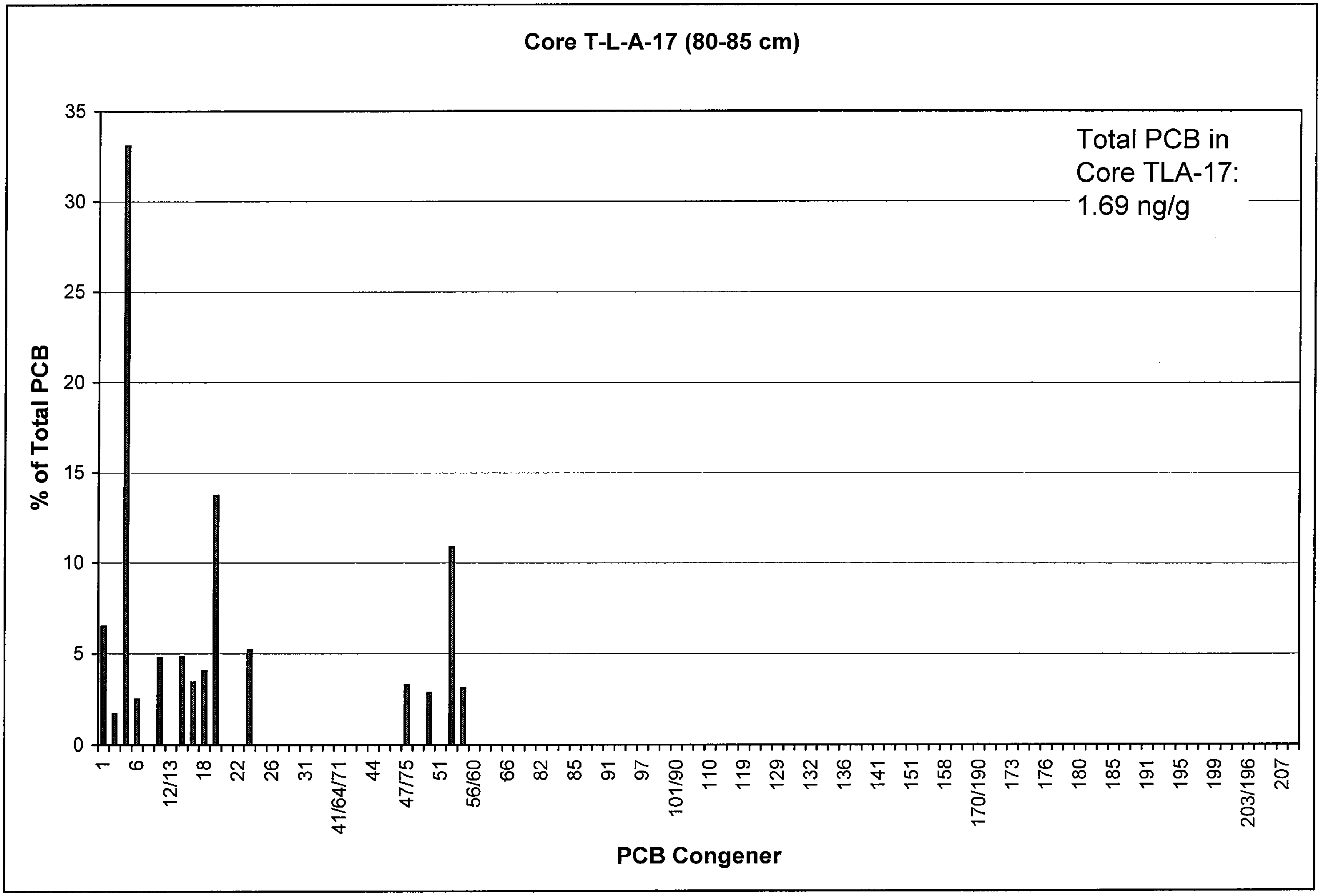

Core T-L-A-14 (65-70 cm)
Total PCB in
Core TLA-14:
1.27 ng/g
% of Total PCB
70
60
50
40
30
20
10
0
1
6
12/13
18
22
26
31
41/64/71
44
47/75
51
56/60
66
82
85
91
97
101/90
110
119
129
132
136
141
151
158
170/190
173
176
180
185
191
195
199
203/196
207
PCB Congener



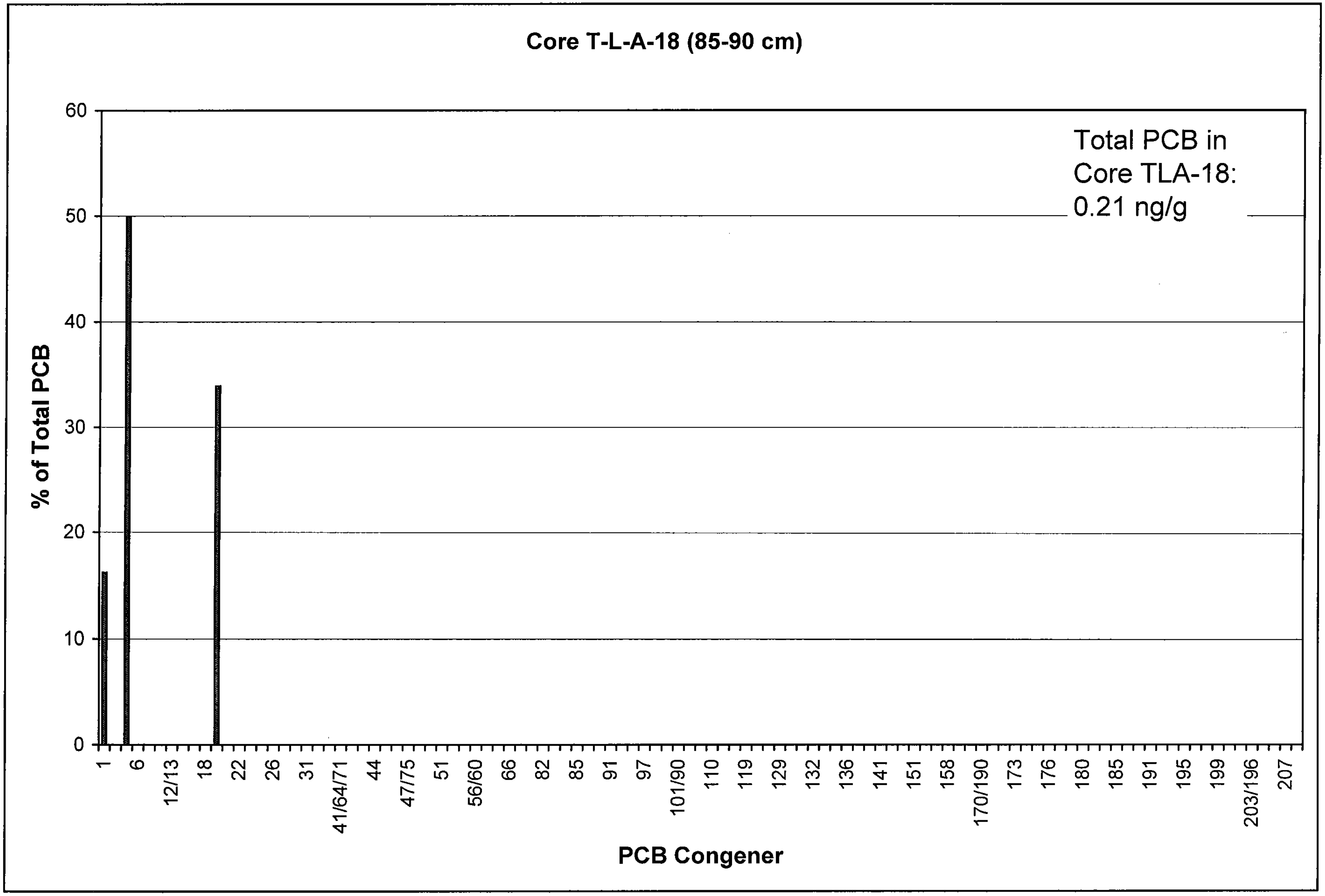
Core T-L-A-15 (70-75 cm)
Total PCB in
Core TLA-15:
0.88 ng/g
% of Total PCB
0
10
20
30
40
50
60
1
6
12/13
18
22
26
31
41/64/71
44
47/75
51
56/60
66
82
85
91
97
101/90
110
119
129
132
136
141
151
158
170/190
173
176
180
185
191
195
199
203/196
207
PCB Congener

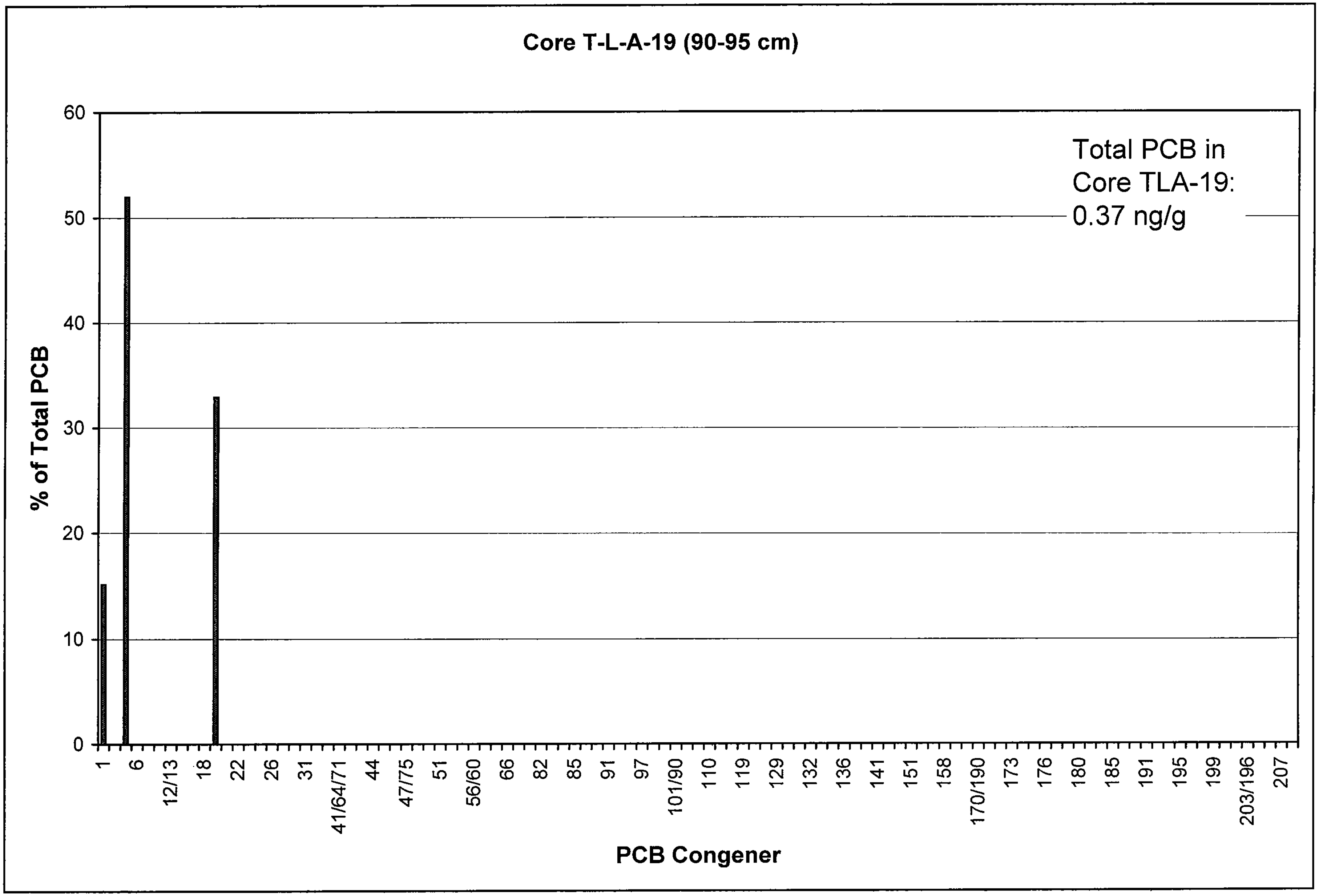


Core T-L-A-16 (75-80 cm)
Total PCB in
Core TLA-16:
1.12 ng/g
% of Total PCB
25
20
15
10
5
0
1
6
12/13
18
22
26
31
41/64/71
44
47/75
51
56/60
66
82
85
91
97
101/90
110
119
129
132
136
141
151
158
170/190
173
176
180
185
191
195
199
203/196
207
PCB Congener

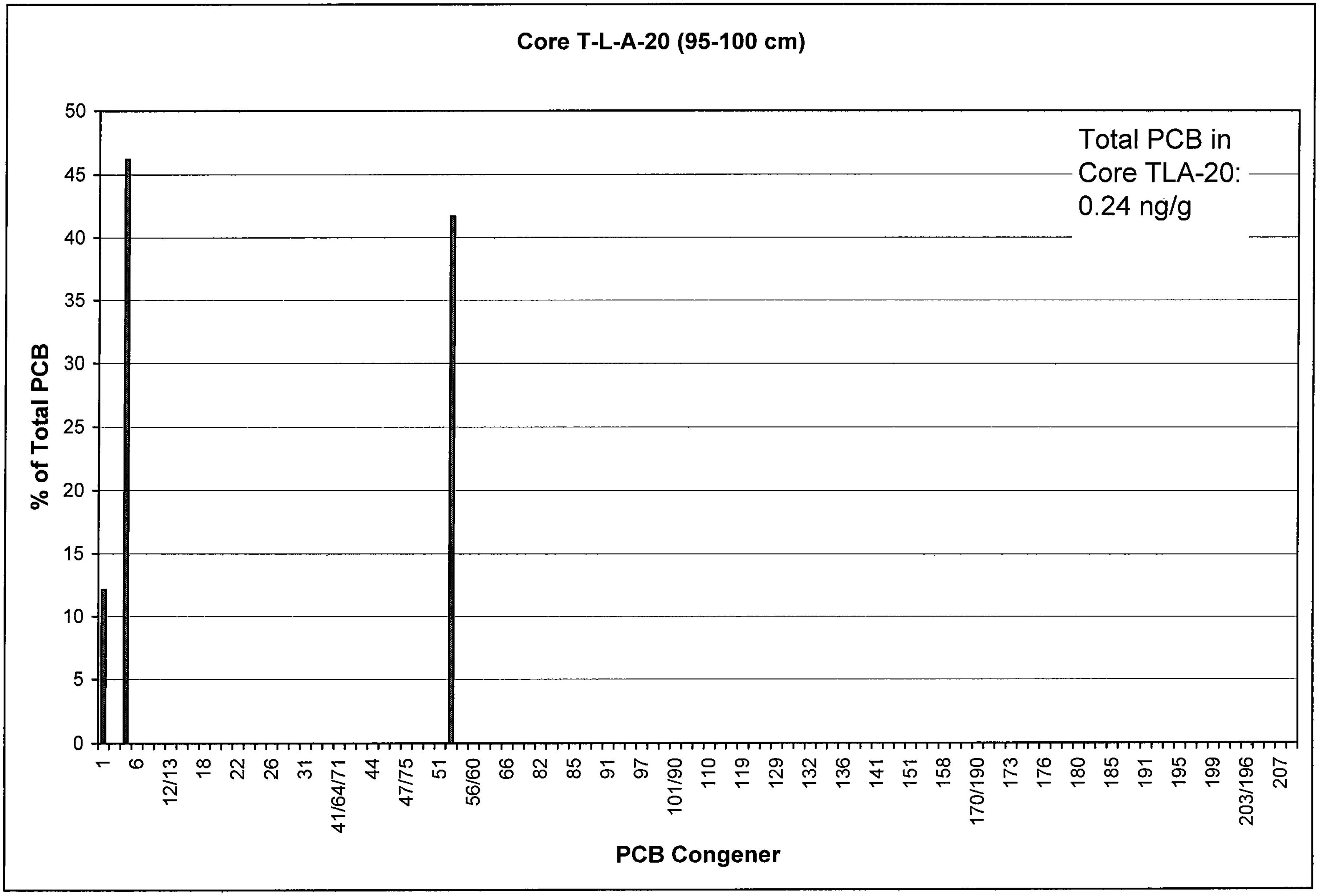


Core T-L-A-17 (80-85 cm)
Total PCB in Core TLA-17: 1.69 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
35
1
6
12/13
18
22
26
31
41/64/71
44
47/75
51
56/60
66
82
85
91
97
101/90
110
119
129
132
136
141
151
158
170/190
173
176
180
185
191
195
199
203/196
207

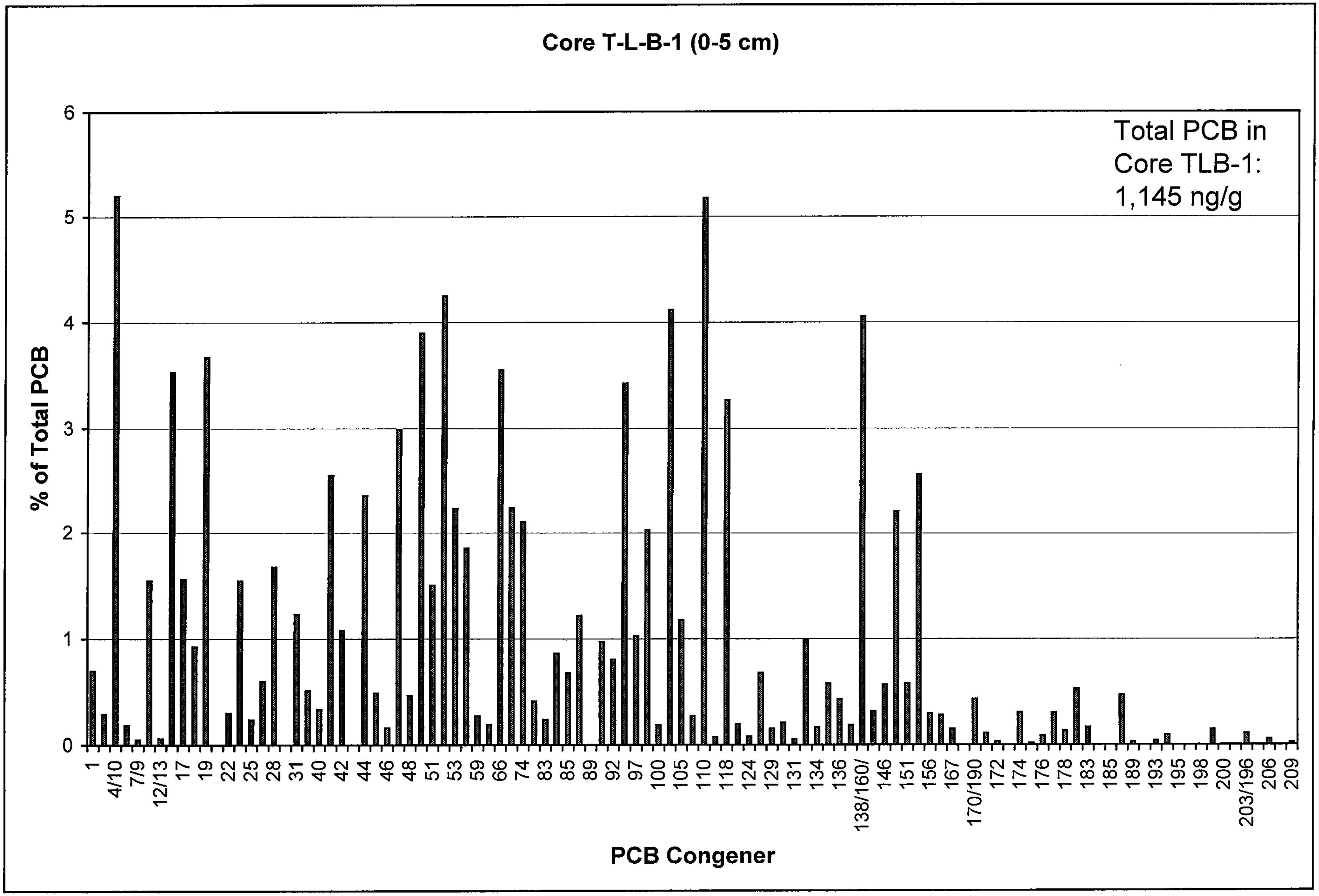

Core T-L-A-18 (85-90 cm)
Total PCB in
Core TLA-18:
0.21 ng/g
% of Total PCB
PCB Congener
60
50
40
30
20
10
0
1
6
12/13
18
22
26
31
41/64/71
44
47/75
51
56/60
66
82
85
91
97
101/90
110
119
129
132
136
141
151
158
170/190
173
176
180
185
191
195
199
203/196
207



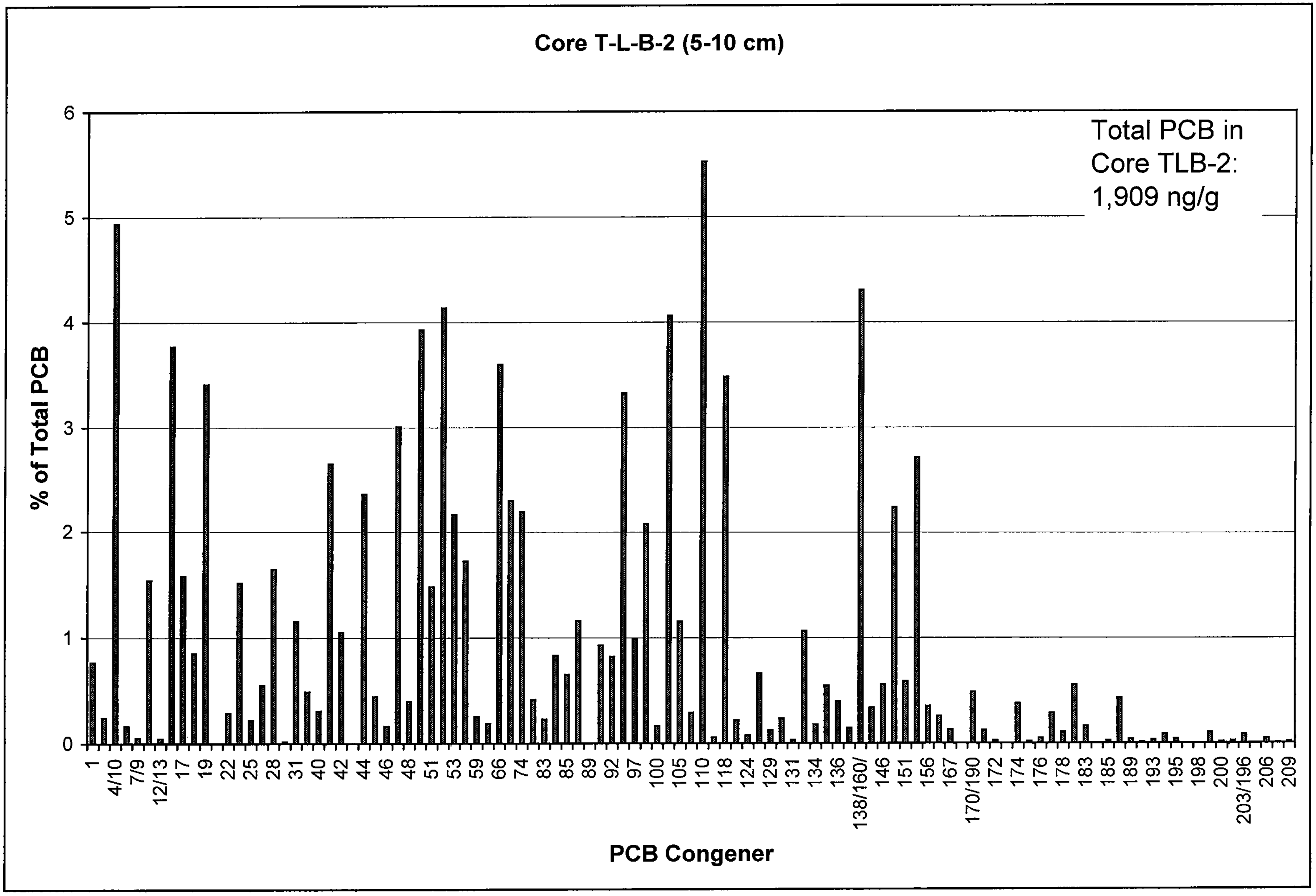
Core T-L-A-19 (90-95 cm)
Total PCB in
Core TLA-19:
0.37 ng/g
% of Total PCB
0
10
20
30
40
50
60
1
6
12/13
18
22
26
31
41/64/71
44
47/75
51
56/60
66
82
85
91
97
101/90
110
119
129
132
136
141
151
158
170/190
173
176
180
185
191
195
199
203/196
207
PCB Congener



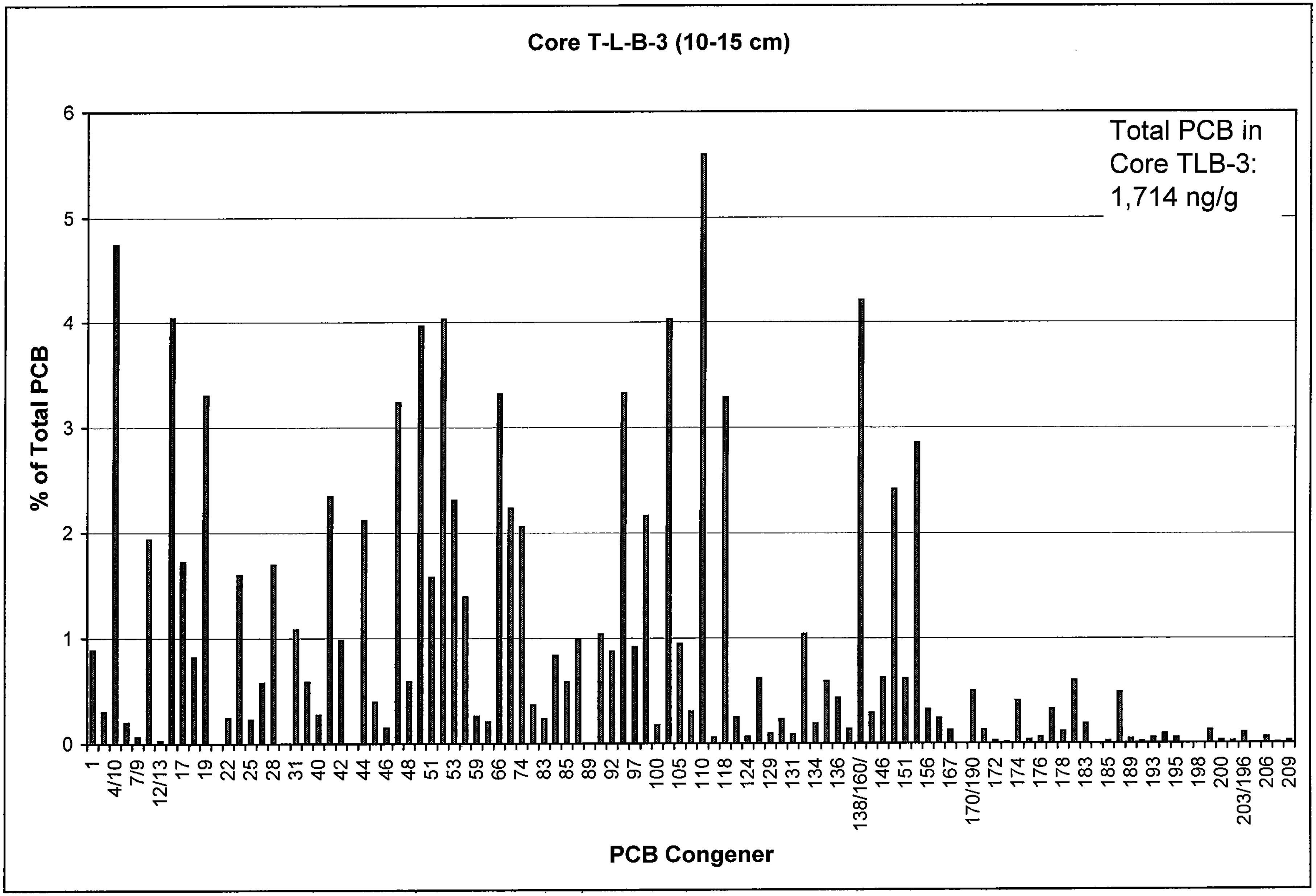
Core T-L-A-20 (95-100 cm)
Total PCB in
Core TLA-20:
0.24 ng/g
% of Total PCB
50
45
40
35
30
25
20
15
10
5
0
1
6
12/13
18
22
26
31
41/64/71
44
47/75
51
56/60
66
82
85
91
97
101/90
110
119
129
132
136
141
151
158
170/190
173
176
180
185
191
195
199
203/196
207
PCB Congener



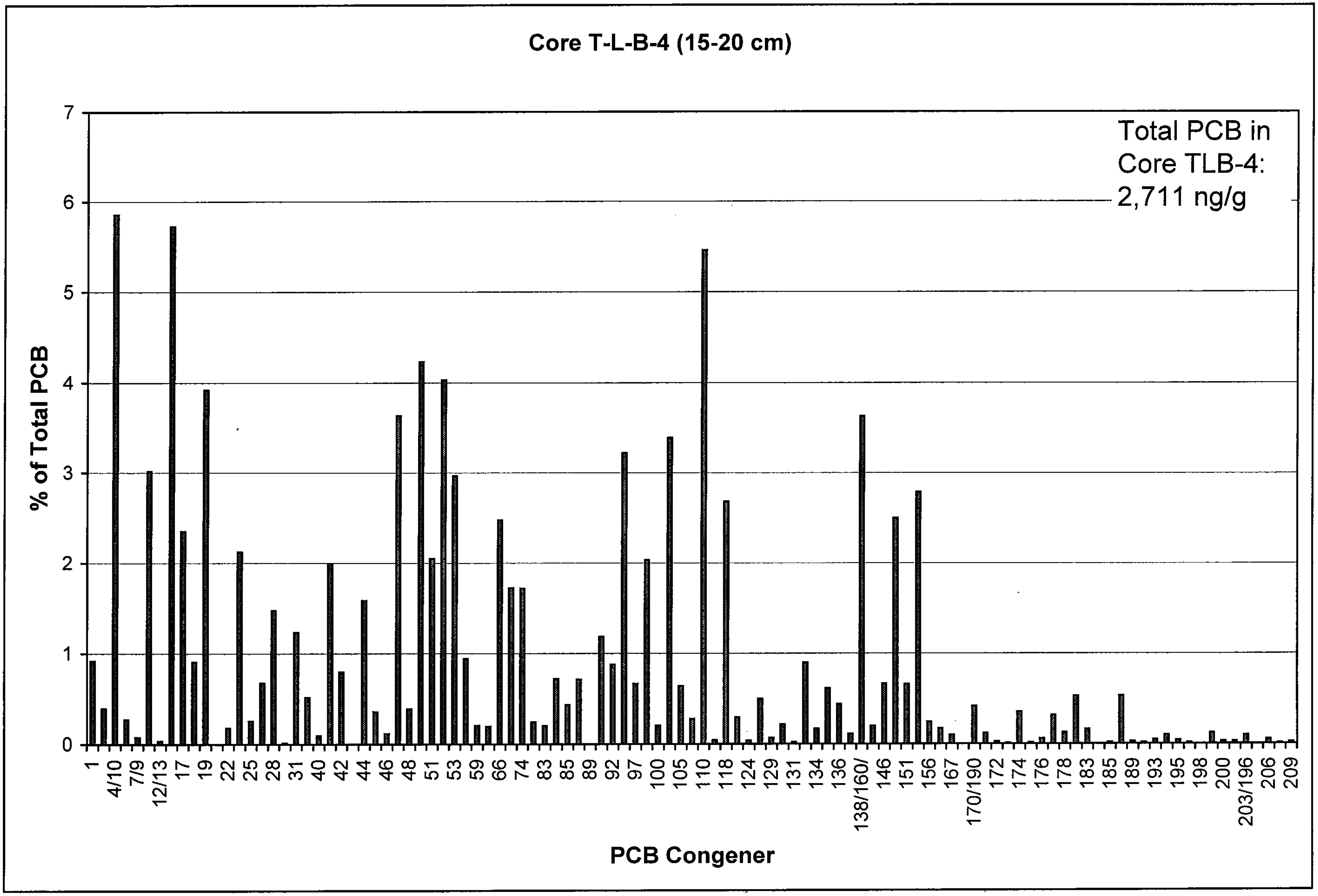
Core T-L-B-1 (0-5 cm)
Total PCB in Core TLB-1: 1,145 ng/g
% of Total PCB
0
1
2
3
4
5
6
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener



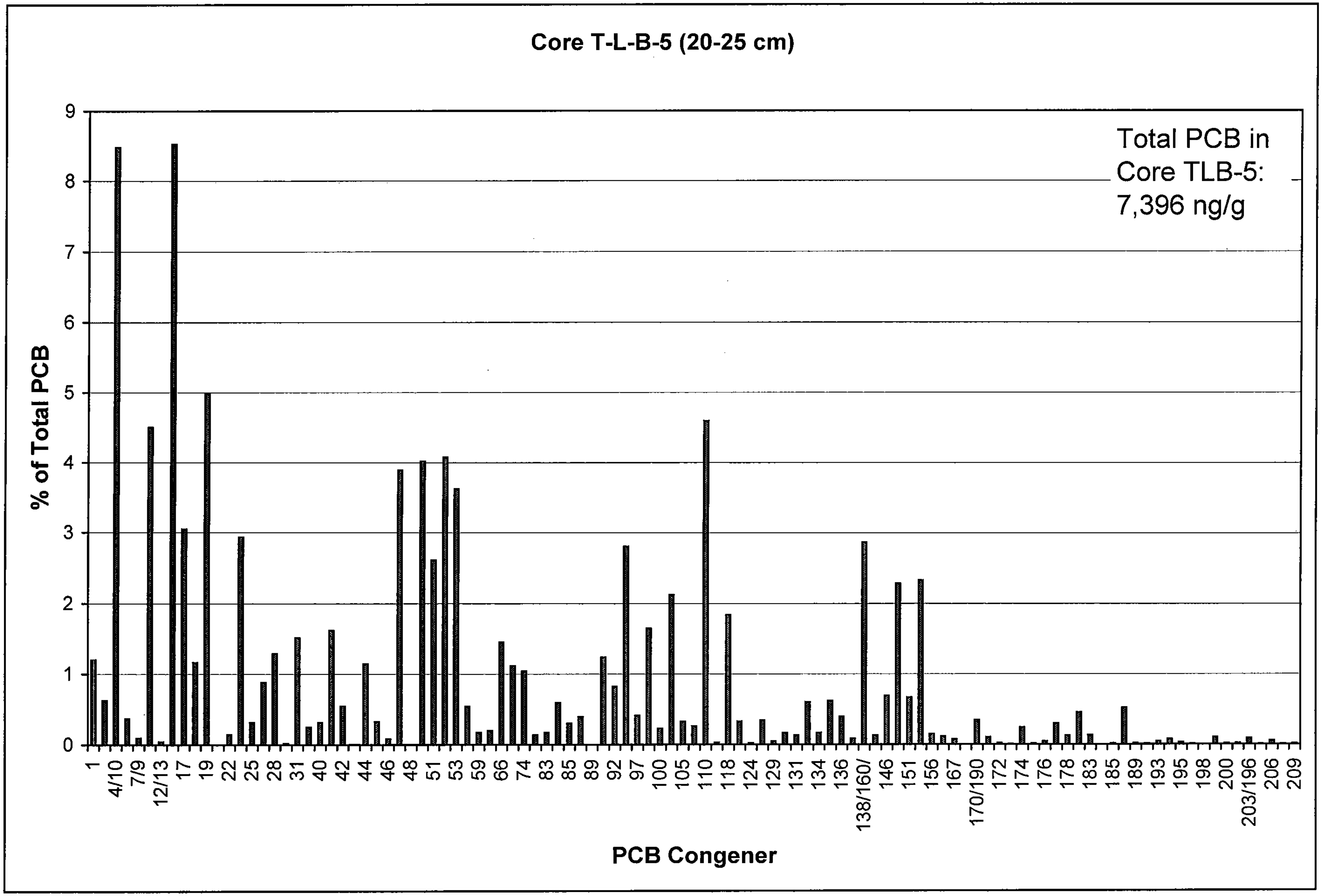
Core T-L-B-2 (5-10 cm)
Total PCB in Core TLB-2: 1,909 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

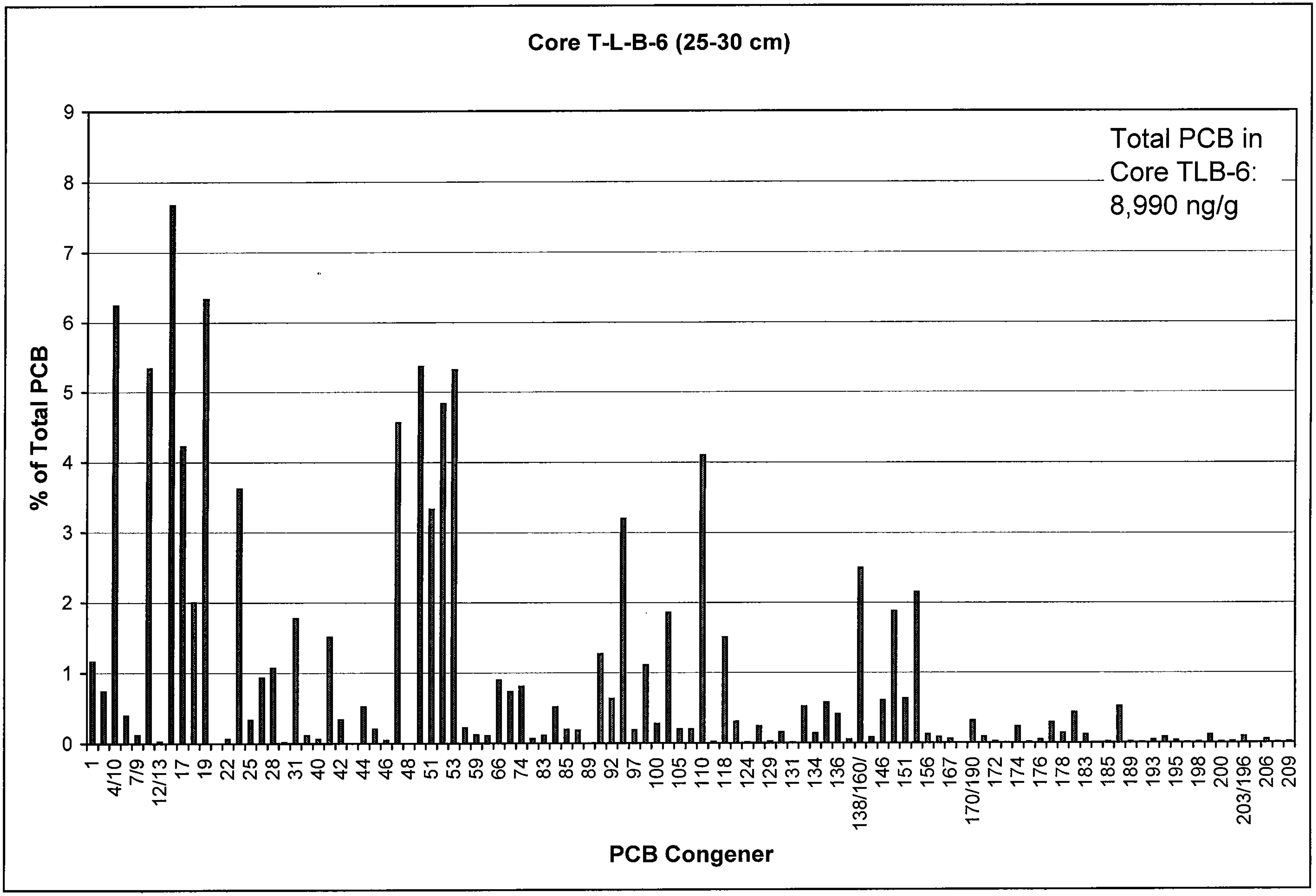


Core T-L-B-3 (10-15 cm)
Total PCB in Core TLB-3: 1,714 ng/g
% of Total PCB
0
1
2
3
4
5
6
PCB Congener
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



Core T-L-B-4 (15-20 cm)
Total PCB in Core TLB-4: 2,711 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209


Core T-L-B-5 (20-25 cm)
Total PCB in Core TLB-5: 7,396 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



Core T-L-B-6 (25-30 cm)
Total PCB in Core TLB-6: 8,990 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
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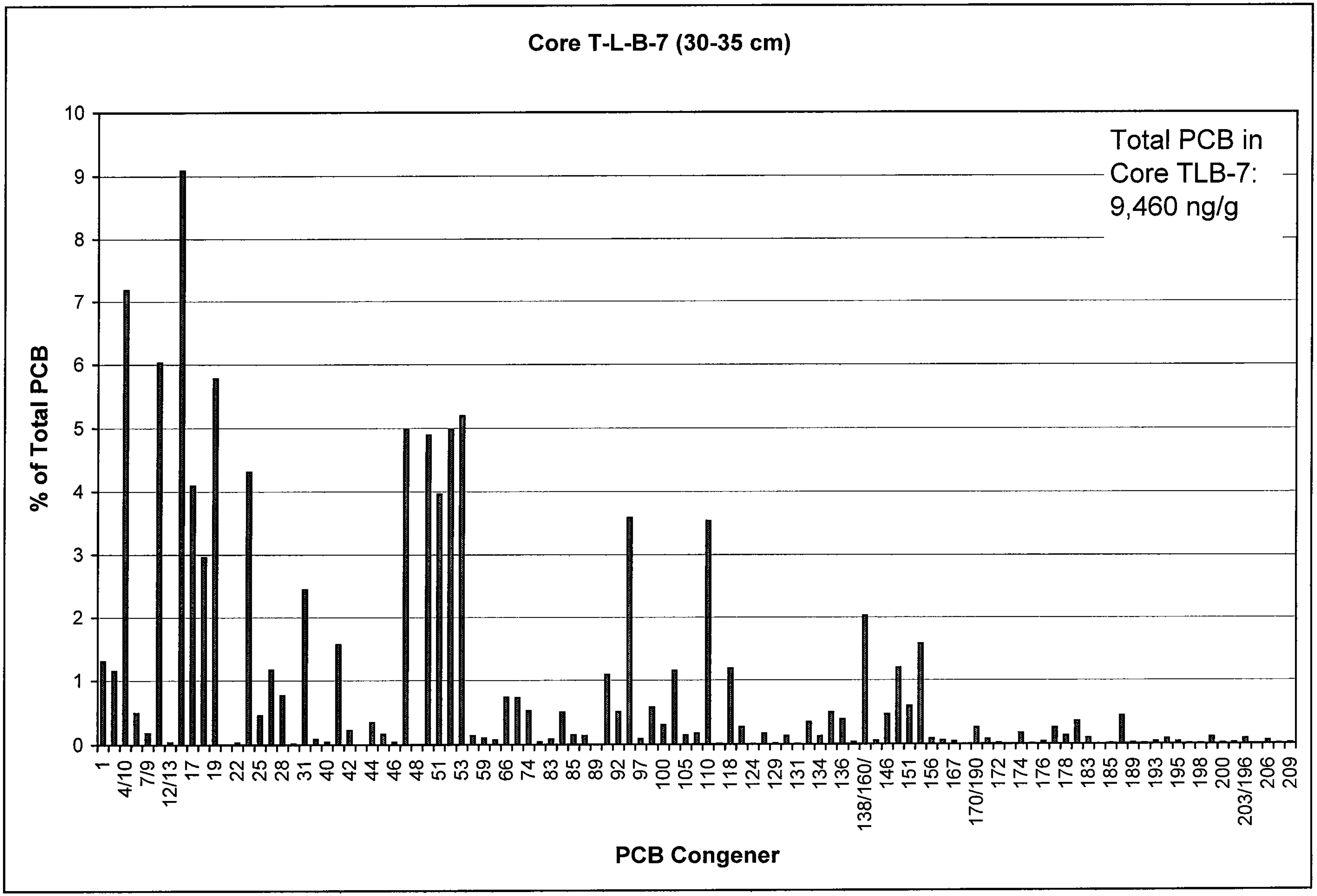
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209



Core T-L-B-7 (30-35 cm)
Total PCB in Core TLB-7: 9,460 ng/g
% of Total PCB
0
1
2
3
4
5
6
7
8
9
10
PCB Congener
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
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85
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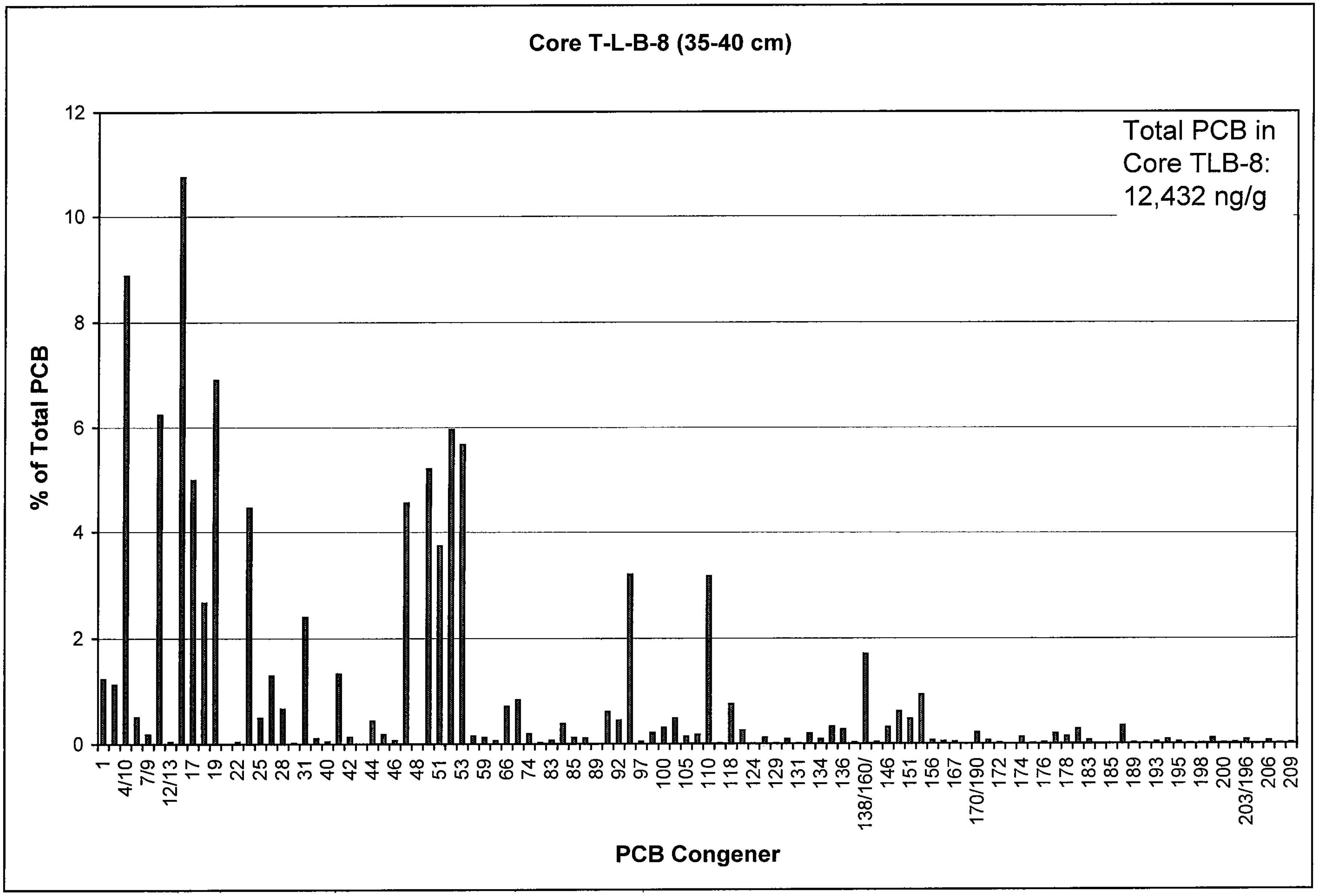
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209


Core T-L-B-8 (35-40 cm)
Total PCB in Core TLB-8: 12,432 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
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170/190
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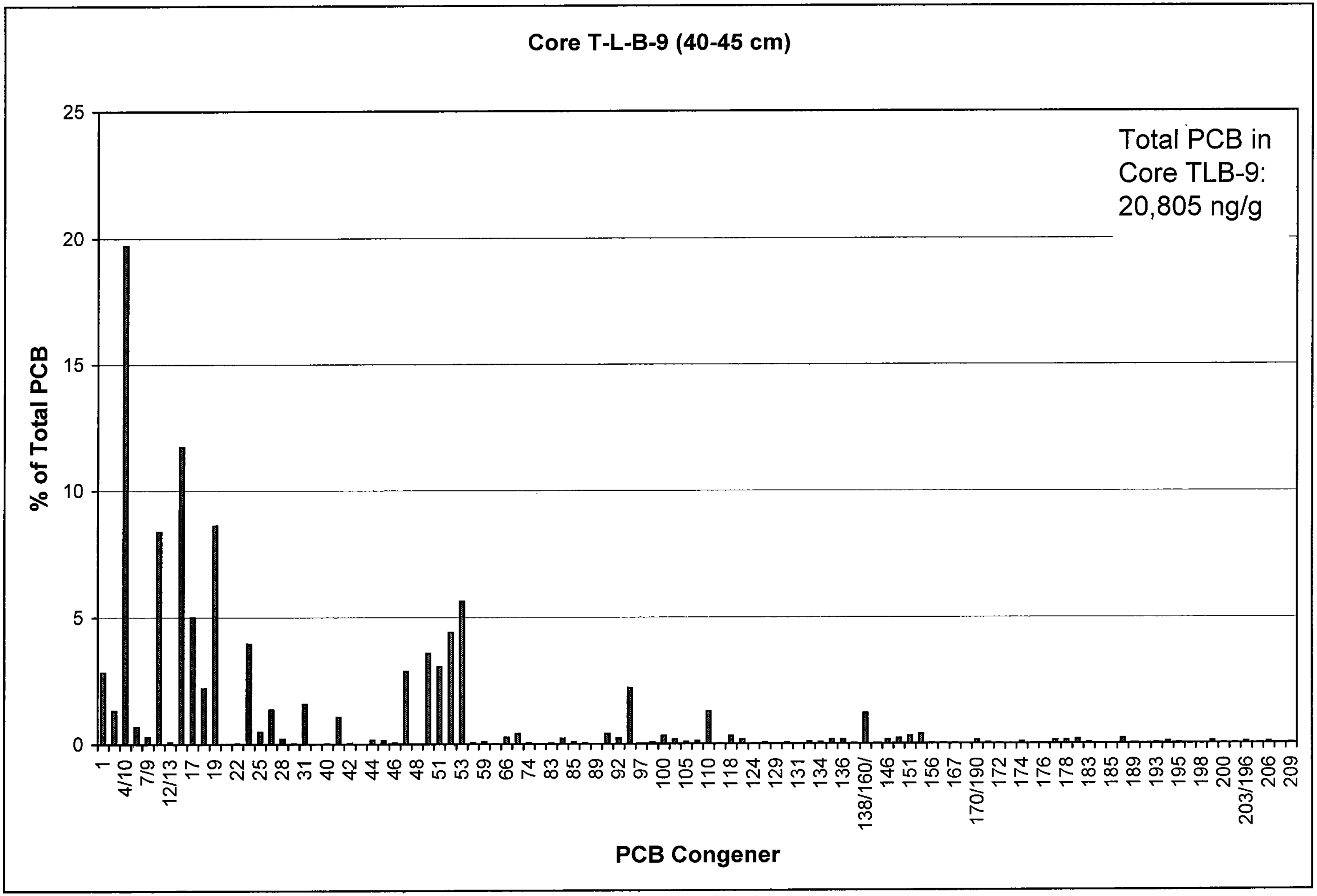
195
198
200
203/196
206
209


Core T-L-B-9 (40-45 cm)
Total PCB in Core TLB-9: 20,805 ng/g
% of Total PCB
PCB Congener
0
5
10
15
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1
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170/190
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203/196
206
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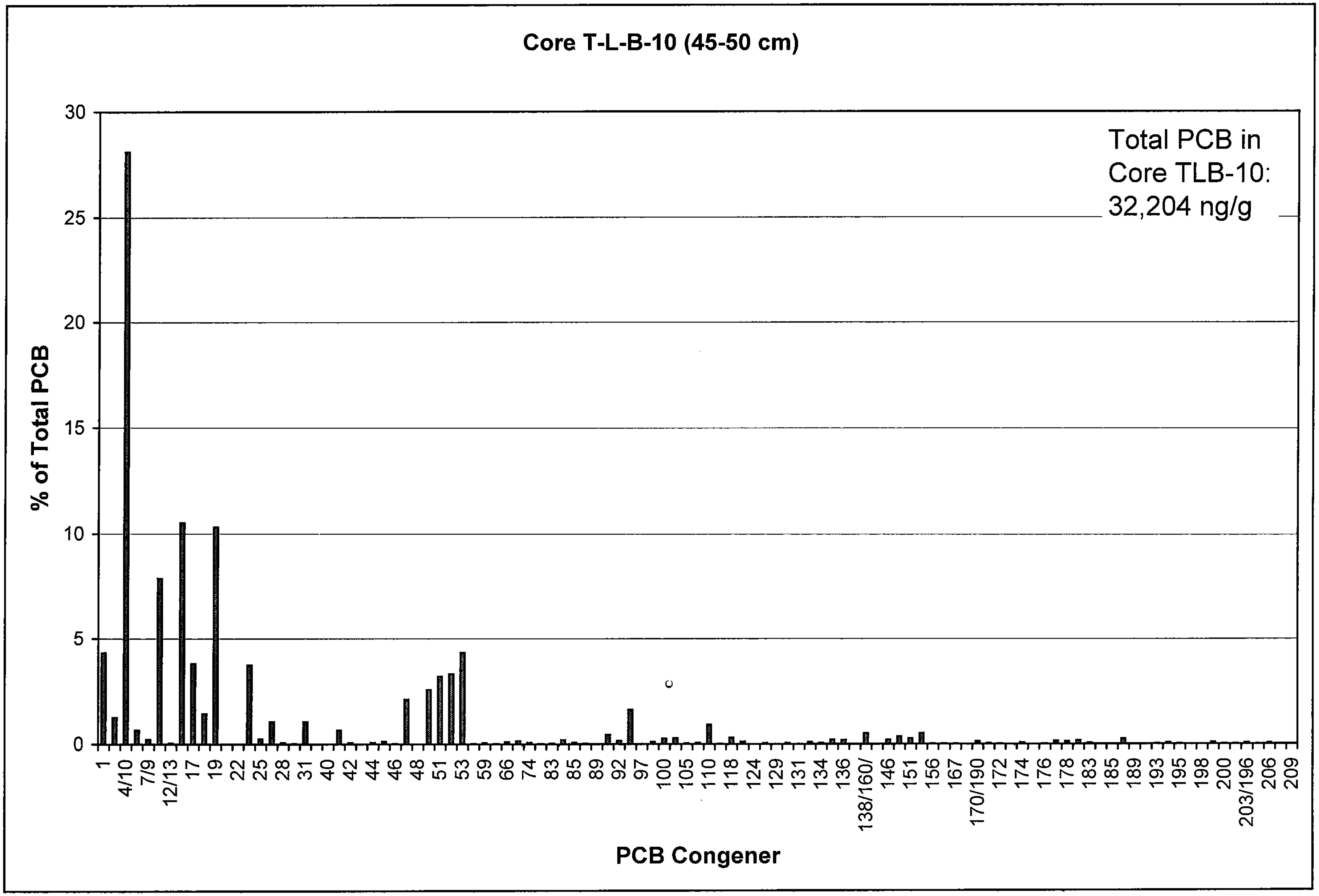

Core T-L-B-10 (45-50 cm)
Total PCB in Core TLB-10: 32,204 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
1
4/10
7/9
12/13
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138/160/
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167
170/190
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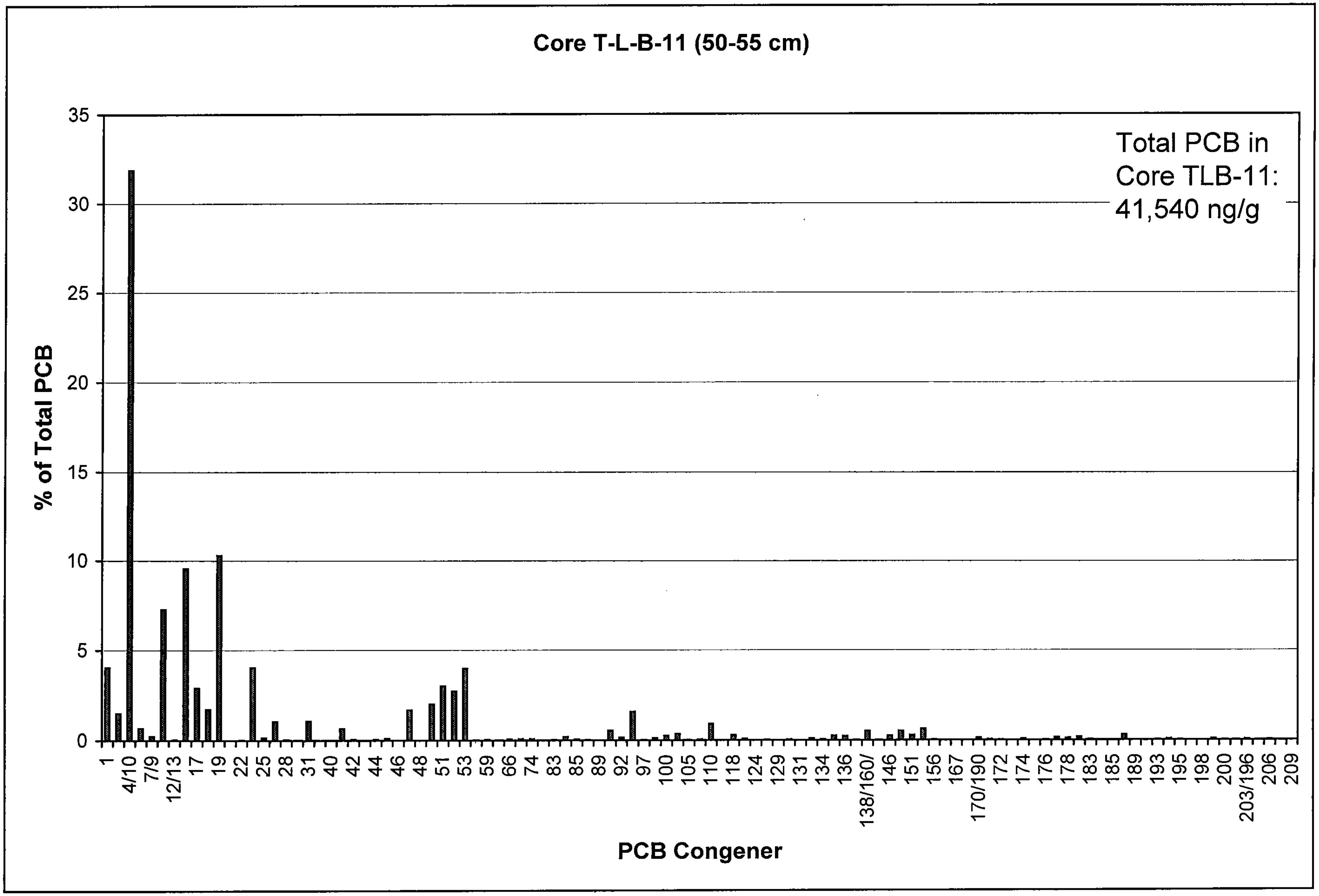
193
195
198
200
203/196
206
209



Core T-L-B-11 (50-55 cm)
Total PCB in Core TLB-11: 41,540 ng/g
% of Total PCB
0
5
10
15
20
25
30
35
1
4/10
7/9
12/13
17
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167
170/190
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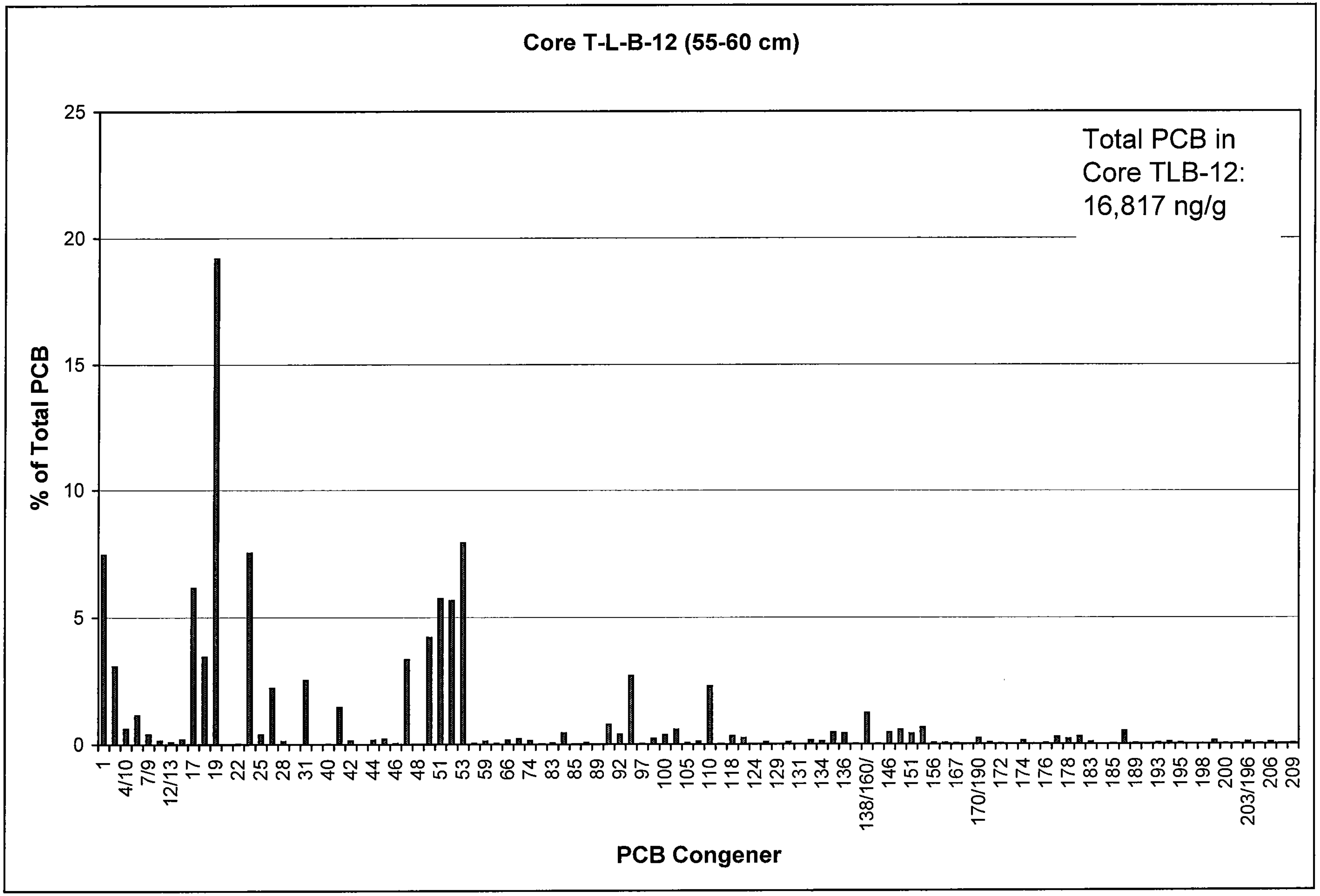
195
198
200
203/196
206
209
PCB Congener



Core T-L-B-12 (55-60 cm)
Total PCB in Core TLB-12: 16,817 ng/g
% of Total PCB
0
5
10
15
20
25
1
4/10
7/9
12/13
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74
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131
134
136
138/160/
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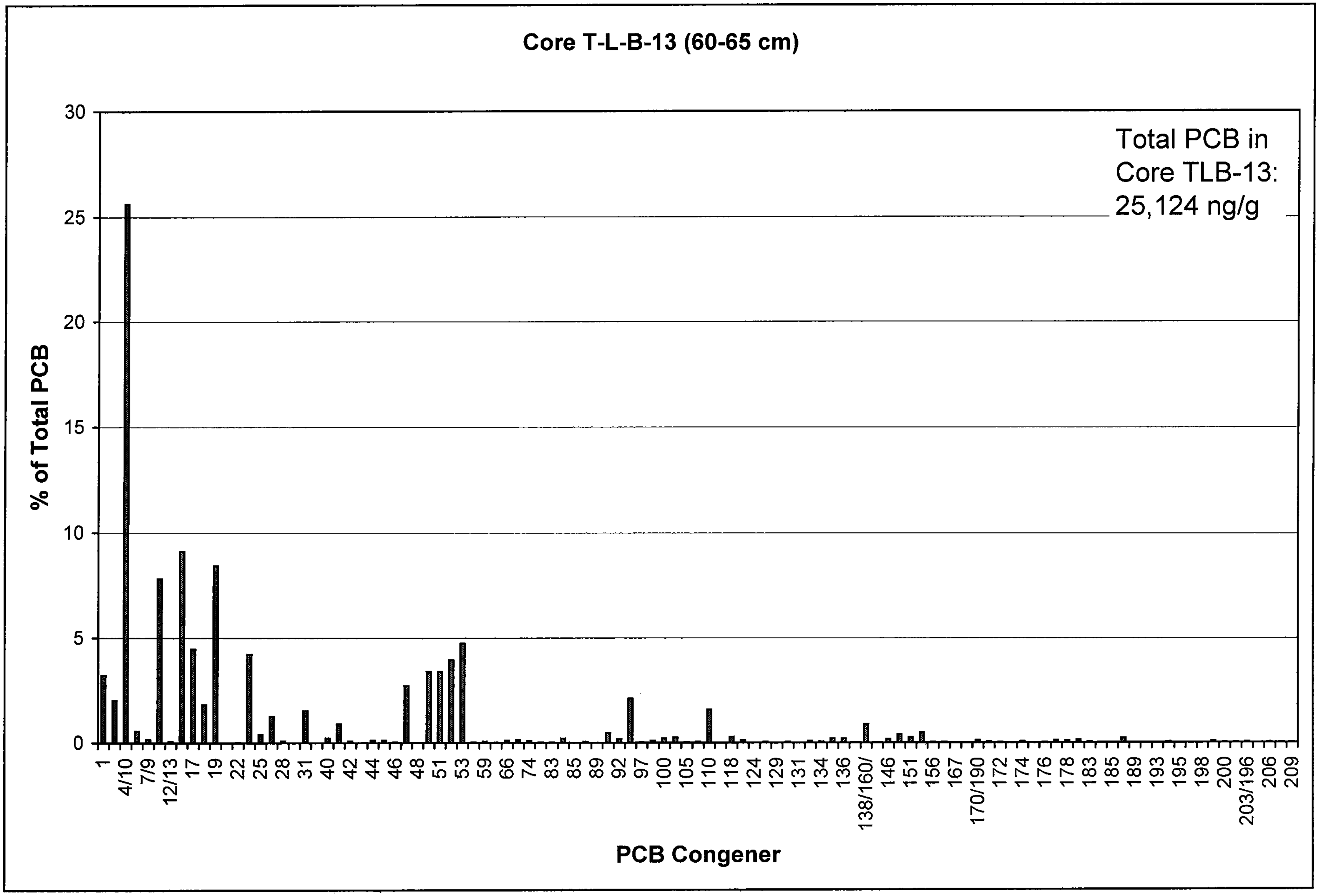
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener



Core T-L-B-13 (60-65 cm)
% of Total PCB
Total PCB in
Core TLB-13:
25,124 ng/g
0
5
10
15
20
25
30
1
4/10
7/9
12/13
17
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42
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48
51
53
59
66
74
83
85
89
92
97
100
105
110
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124
129
131
134
136
138/160/
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167
170/190
172
174
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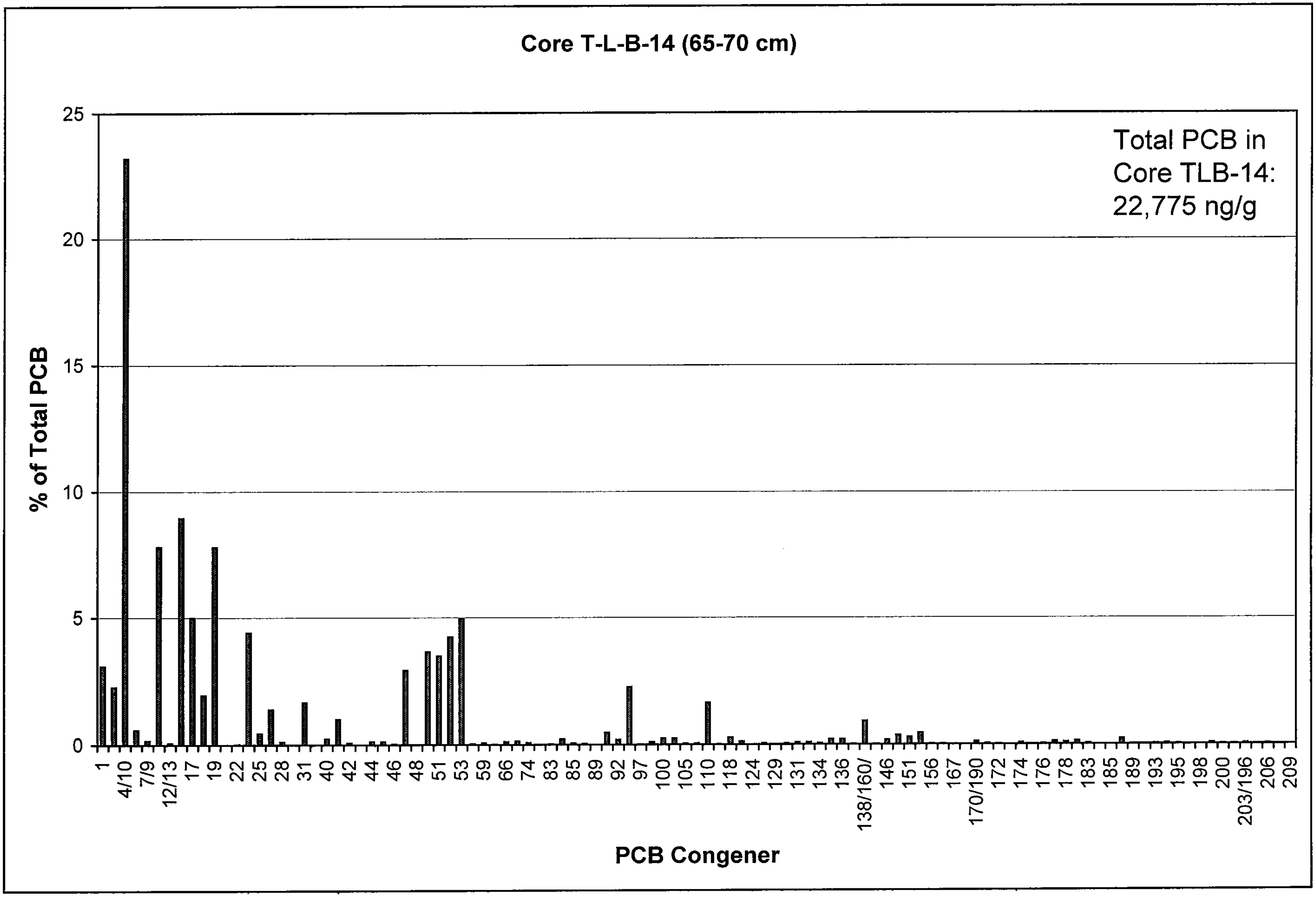
185
189
193
195
198
200
203/196
206
209
PCB Congener



Core T-L-B-14 (65-70 cm)
Total PCB in Core TLB-14: 22,775 ng/g
% of Total PCB
0
5
10
15
20
25
PCB Congener
1
4/10
7/9
12/13
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59
66
74
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170/190
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203/196
206
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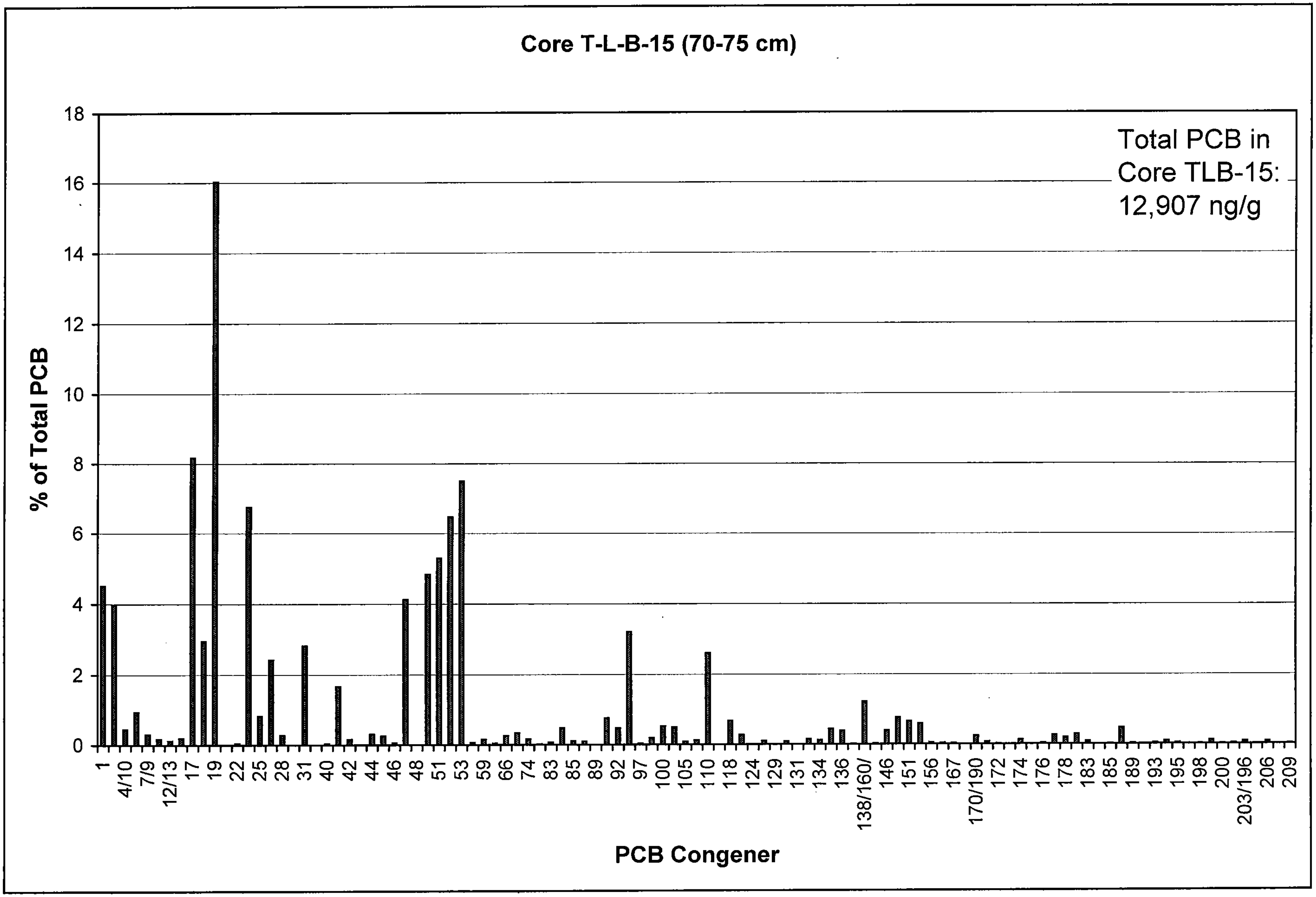

Core T-L-B-15 (70-75 cm)
Total PCB in Core TLB-15: 12,907 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
14
16
18
1
4/10
7/9
12/13
17
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25
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51
53
59
66
74
83
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89
92
97
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170/190
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198
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203/196
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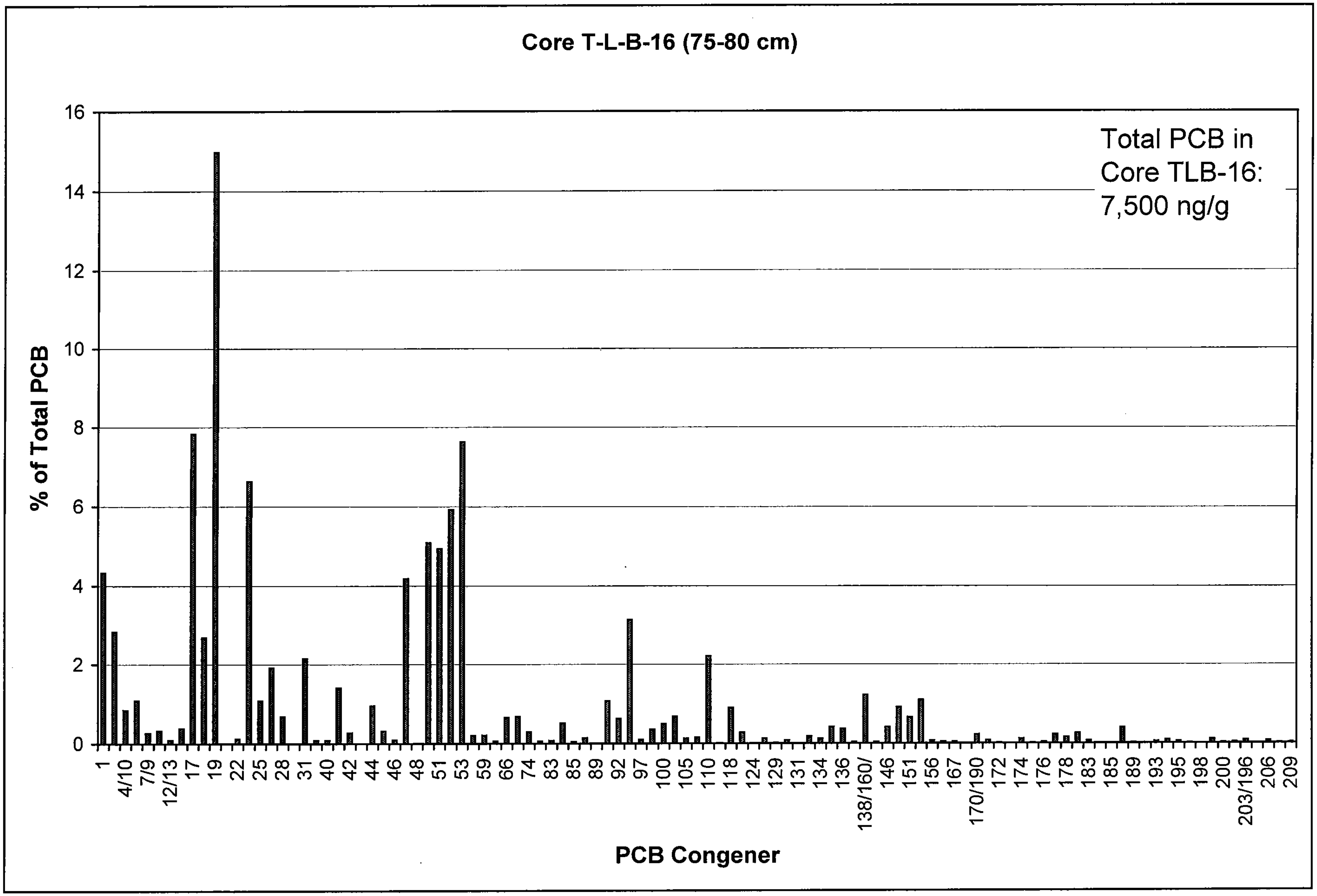

Core T-L-B-16 (75-80 cm)
Total PCB in Core TLB-16: 7,500 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
14
16
1
4/10
7/9
12/13
17
19
22
25
28
31
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42
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48
51
53
59
66
74
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170/190
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203/196
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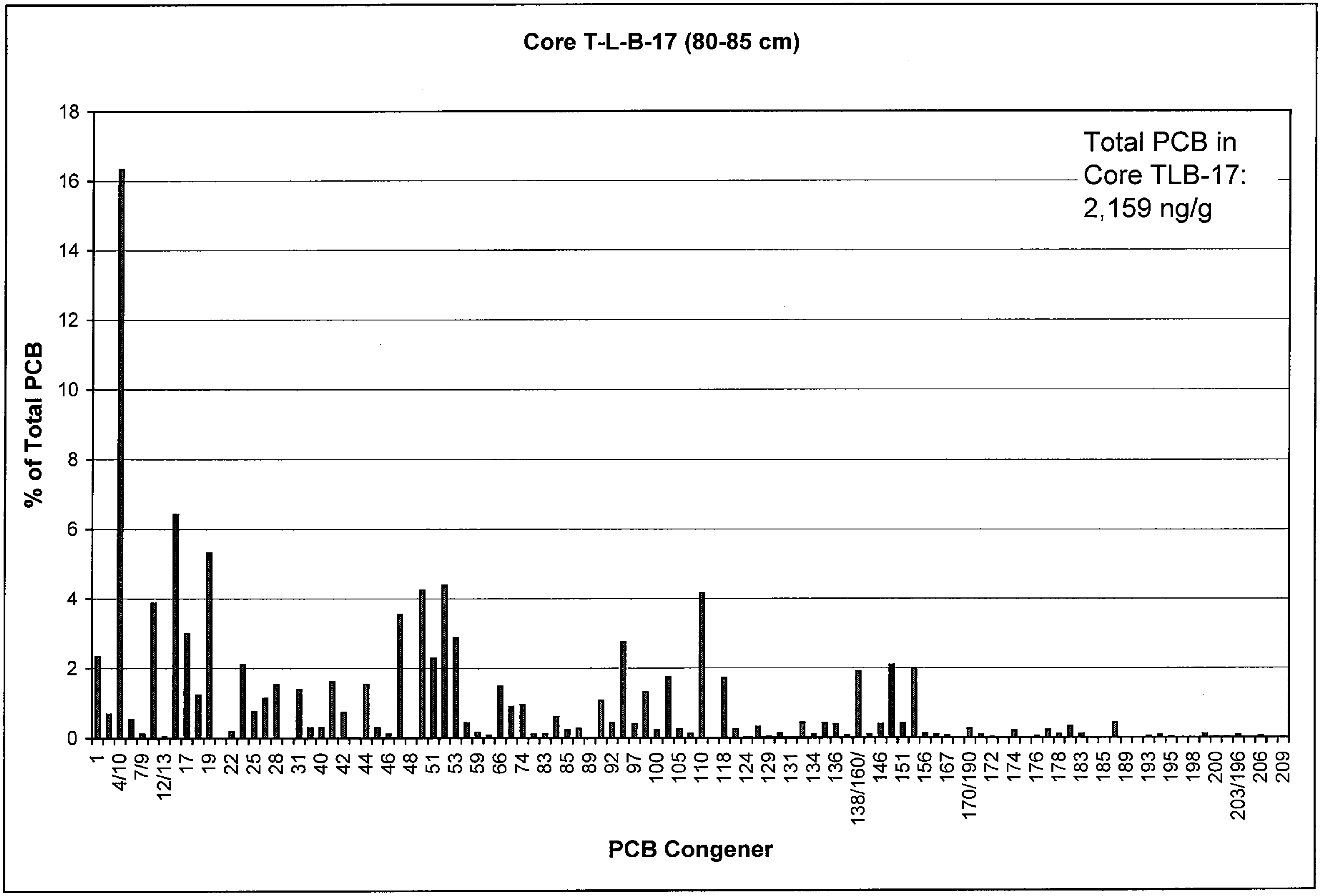

Core T-L-B-17 (80-85 cm)
Total PCB in Core TLB-17: 2,159 ng/g
% of Total PCB
0
2
4
6
8
10
12
14
16
18
1
4/10
7/9
12/13
17
19
22
25
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170/190
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193
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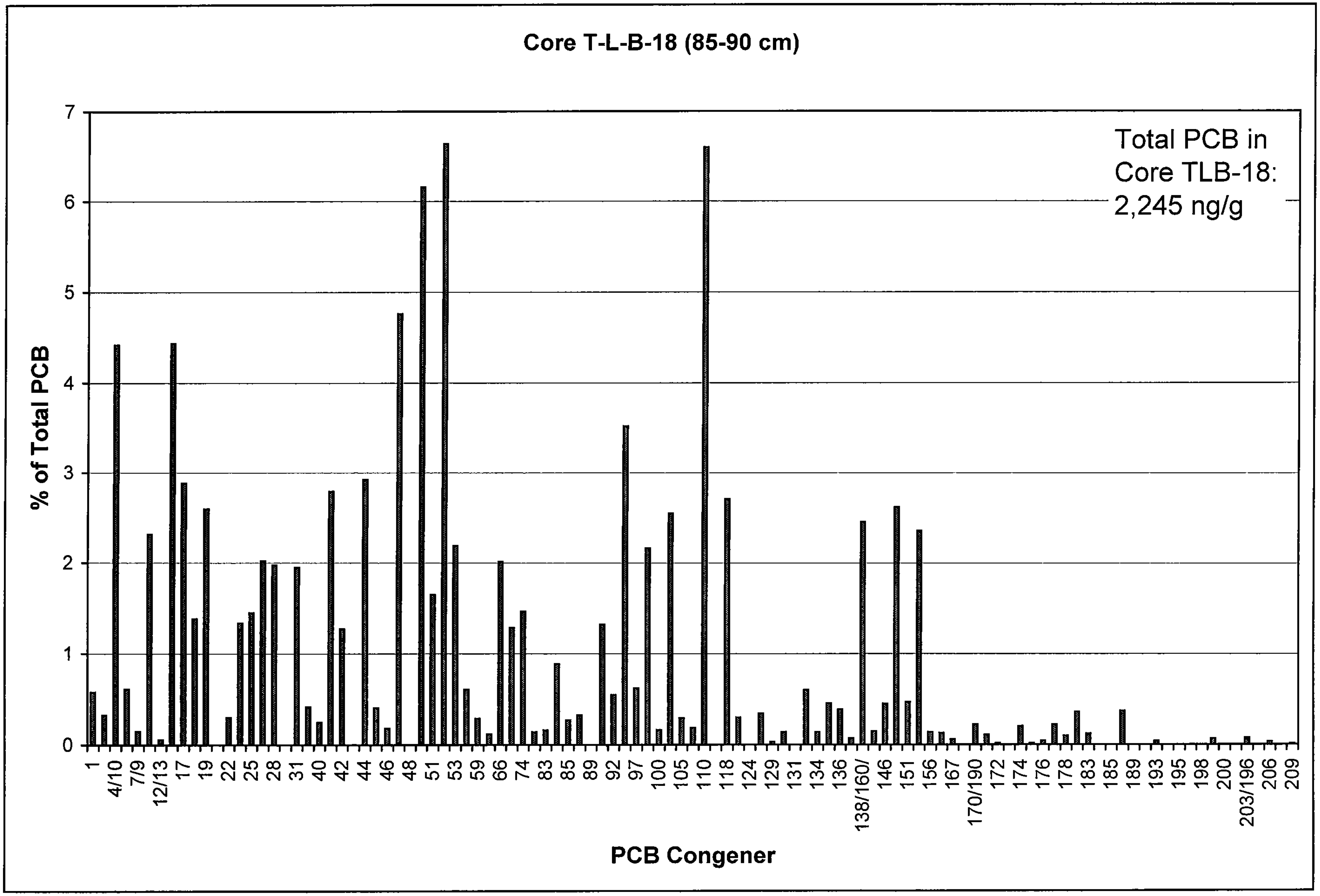
198
200
203/196
206
209
PCB Congener



Core T-L-B-18 (85-90 cm)
Total PCB in Core TLB-18: 2,245 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
1
4/10
7/9
12/13
17
19
22
25
28
31
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170/190
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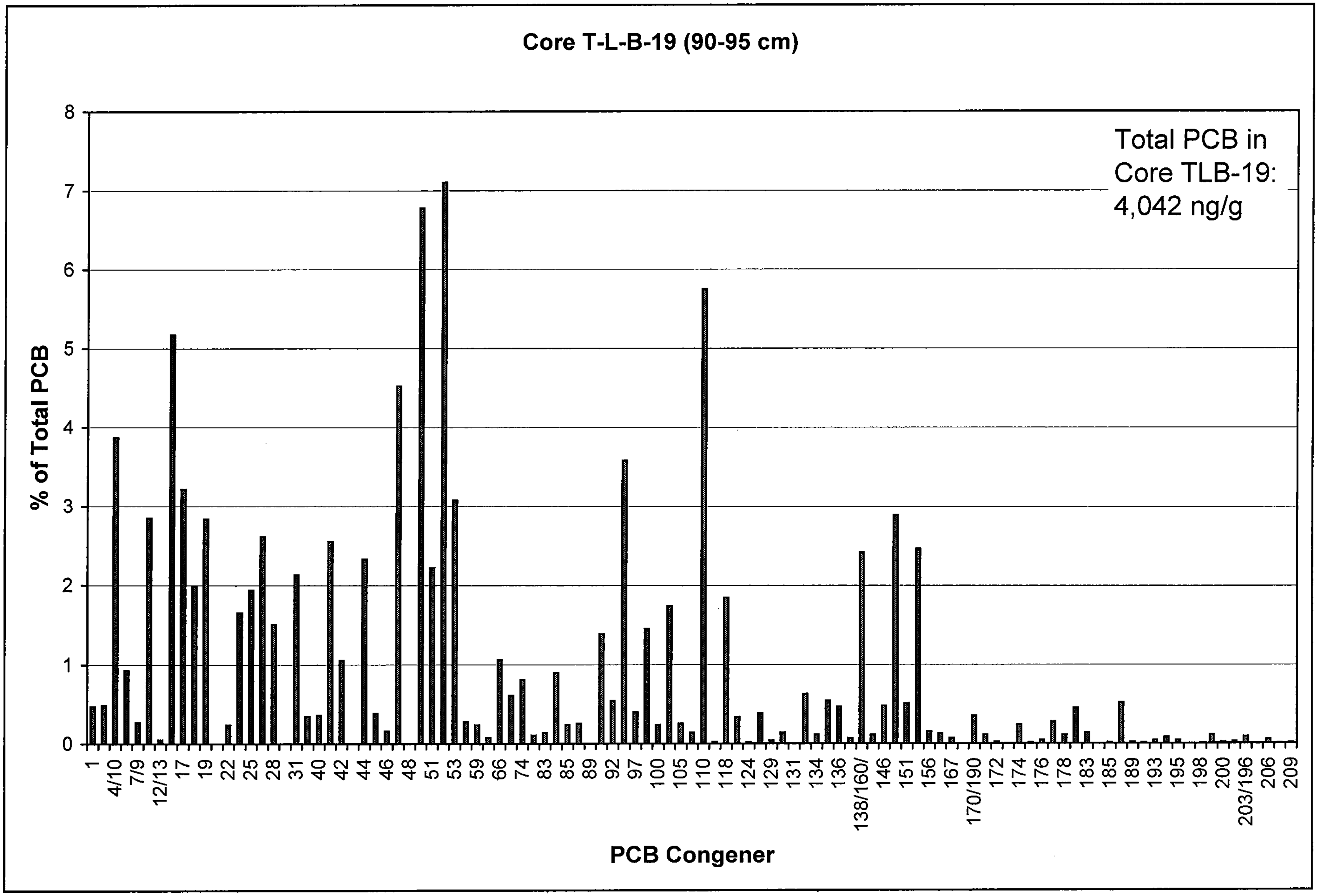

Core T-L-B-19 (90-95 cm)
Total PCB in Core TLB-19: 4,042 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
1
4/10
7/9
12/13
17
19
22
25
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170/190
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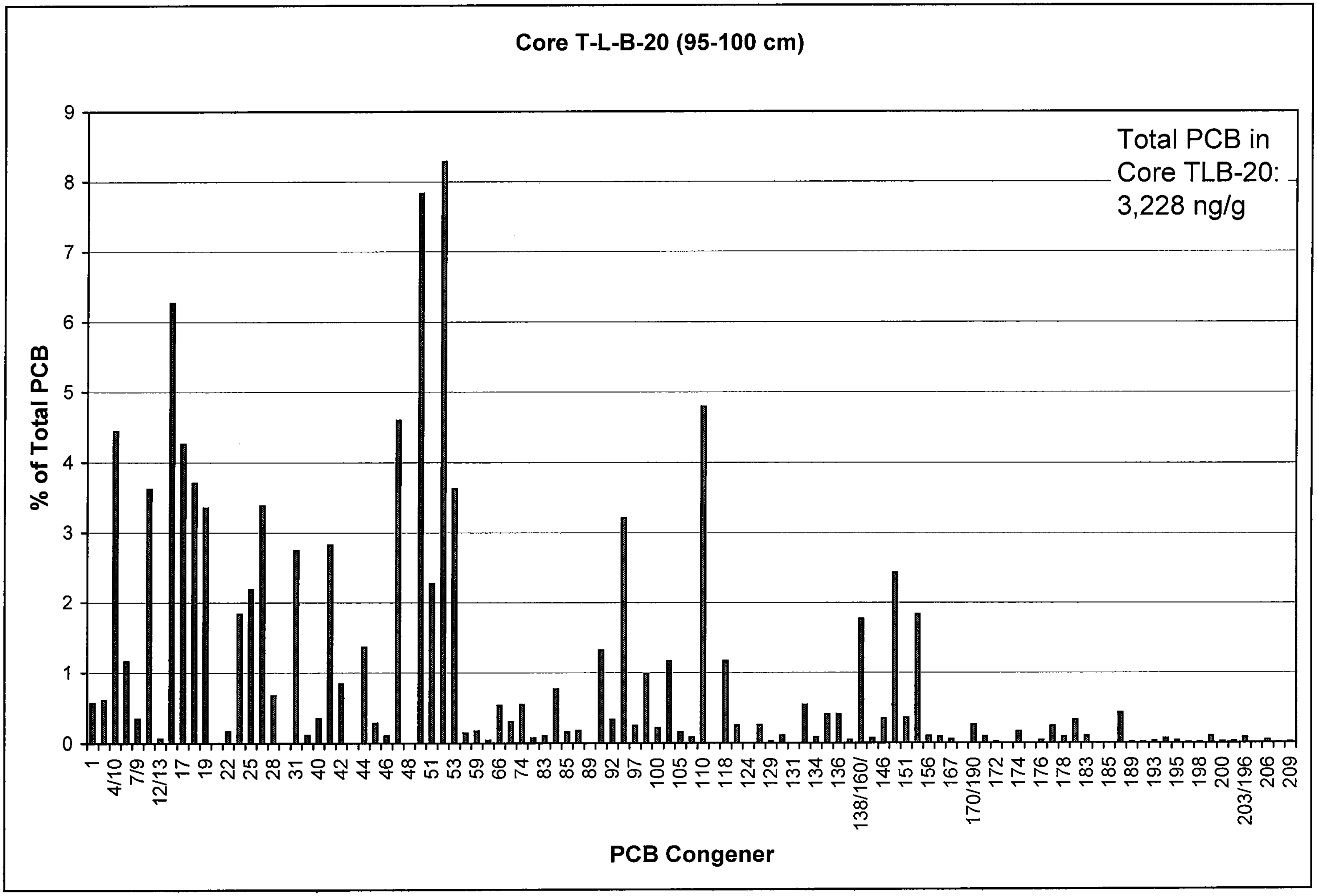

Core T-L-B-20 (95-100 cm)
Total PCB in Core TLB-20: 3,228 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
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53
59
66
74
83
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170/190
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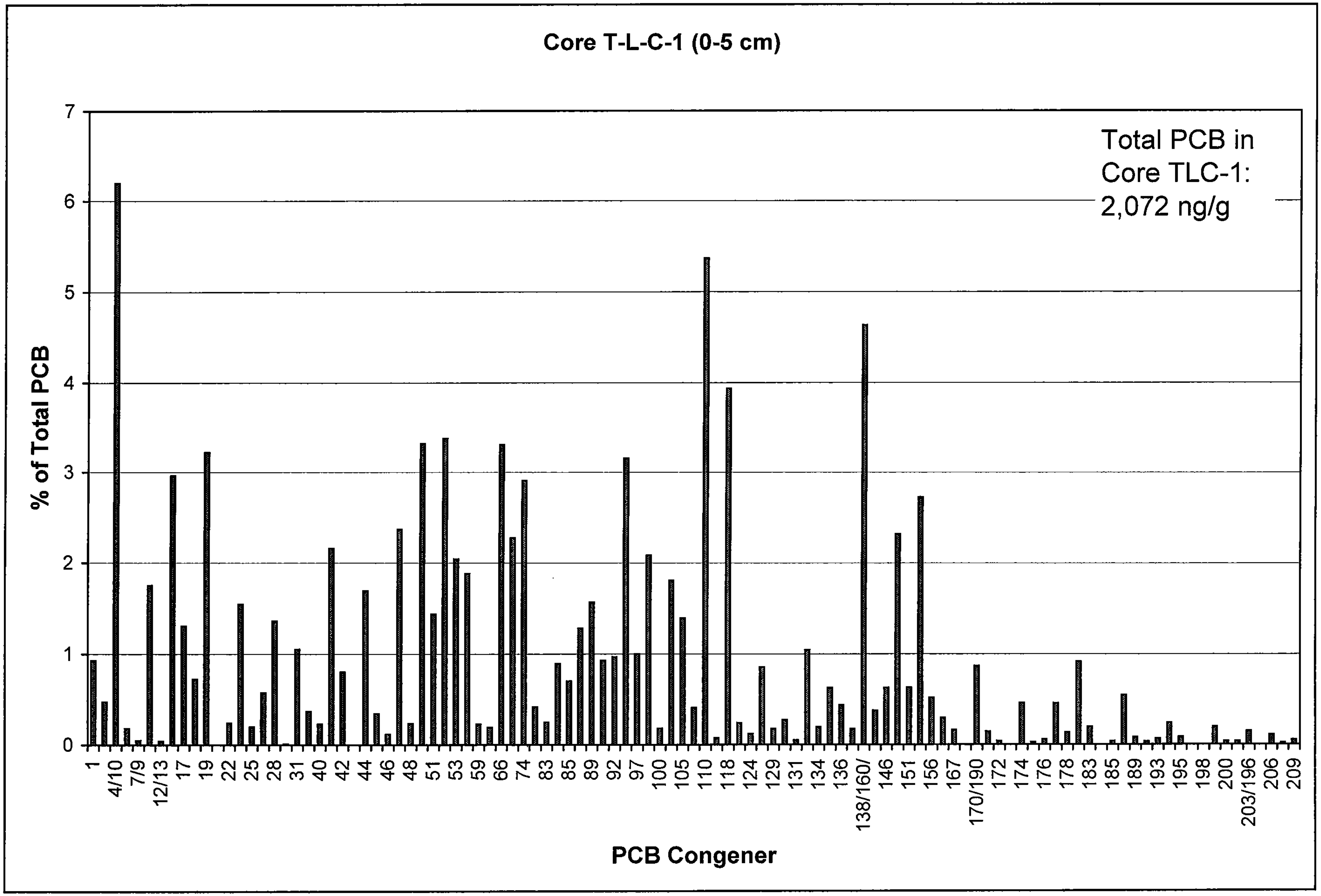

Core T-L-C-1 (0-5 cm)
Total PCB in
Core TLC-1:
2,072 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
1
4/10
7/9
12/13
17
19
22
25
28
31
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42
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170/190
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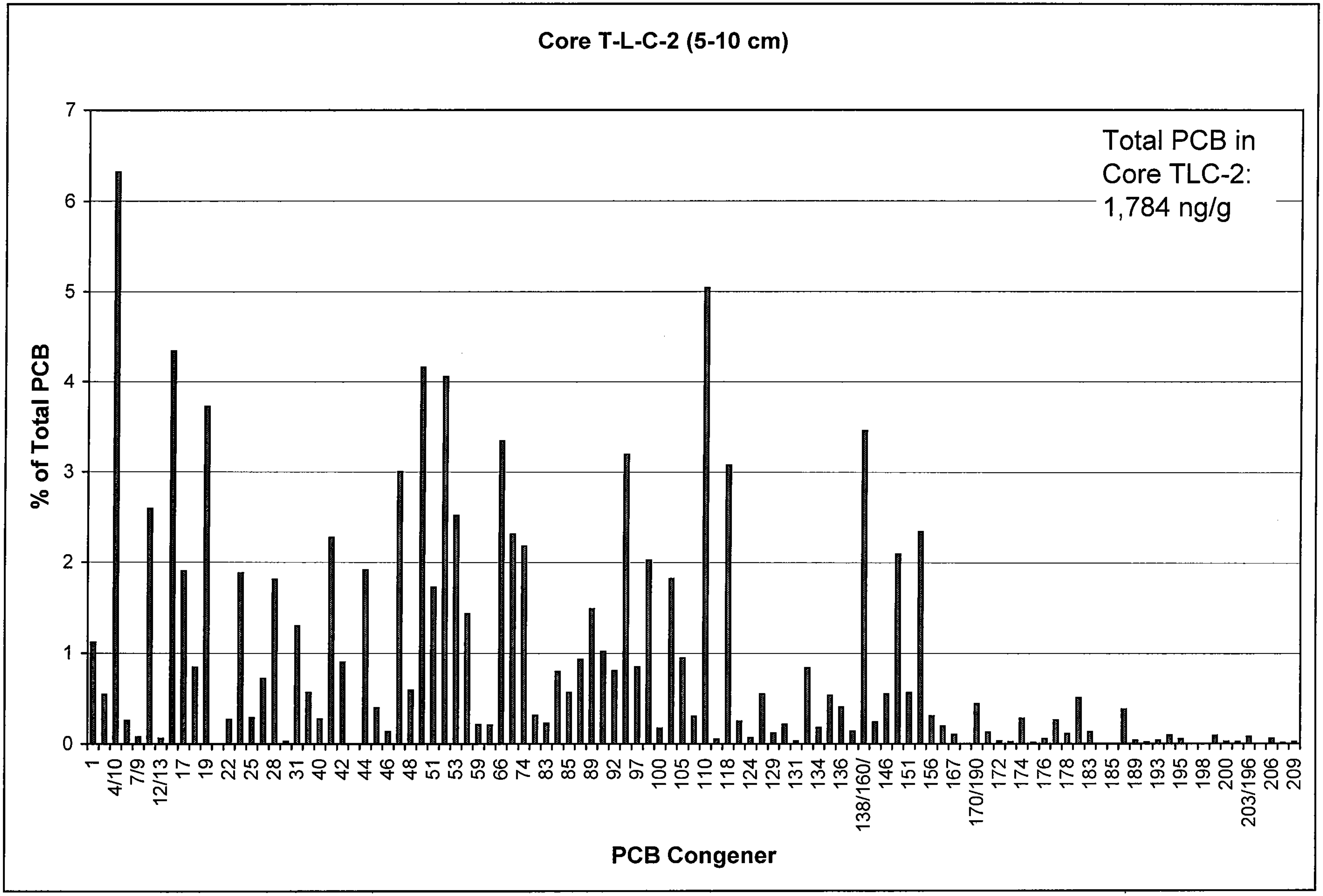
Core T-L-C-2 (5-10 cm)
Total PCB in
Core TLC-2:
1,784 ng/g
% of Total PCB
0
1
2
3
4
5
6
7
1
4/10
7/9
12/13
17
19
22
25
28
31
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42
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66
74
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138/160/
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170/190
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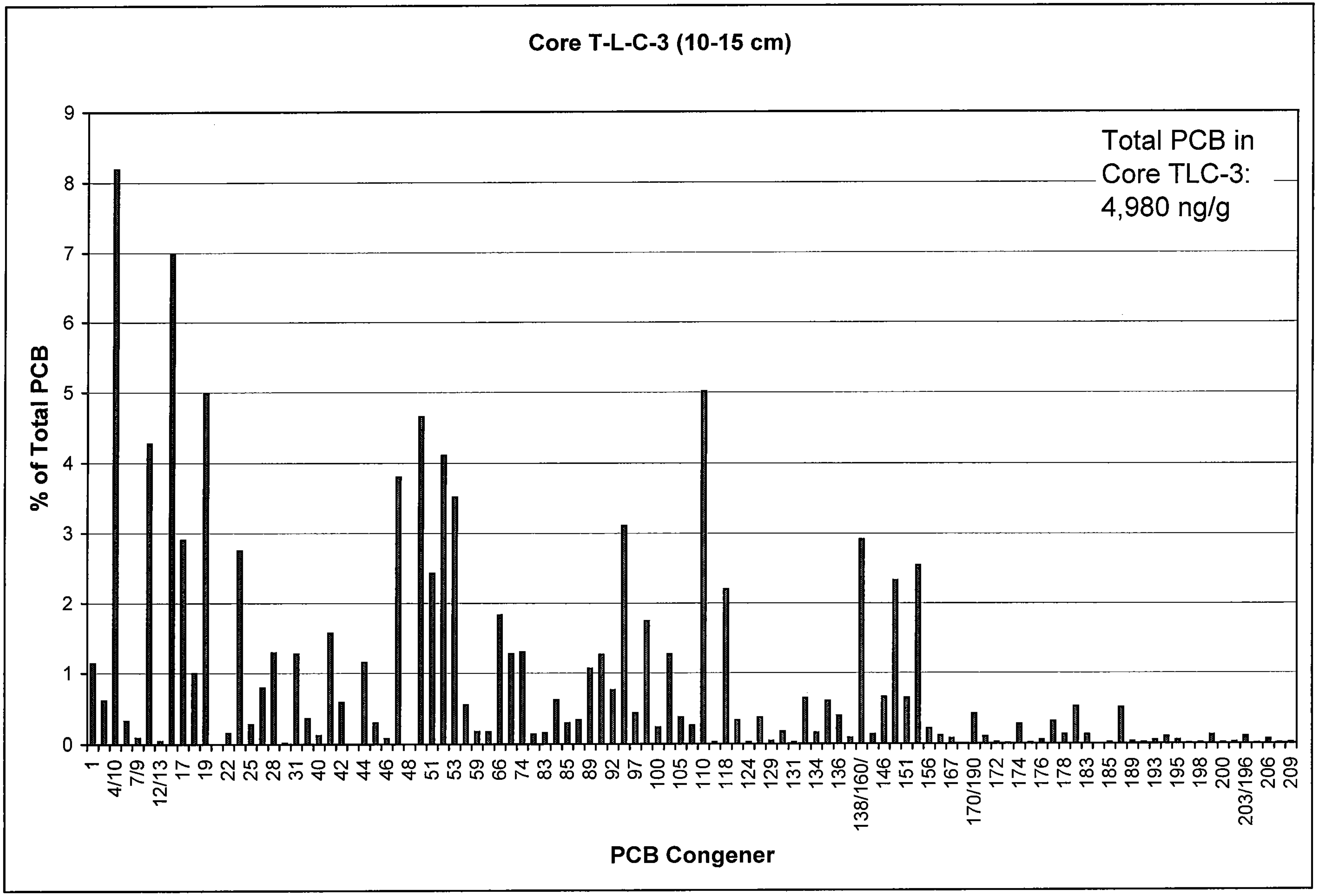
198
200
203/196
206
209
PCB Congener


Core T-L-C-3 (10-15 cm)
Total PCB in
Core TLC-3:
4,980 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
22
25
28
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74
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131
134
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170/190
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198
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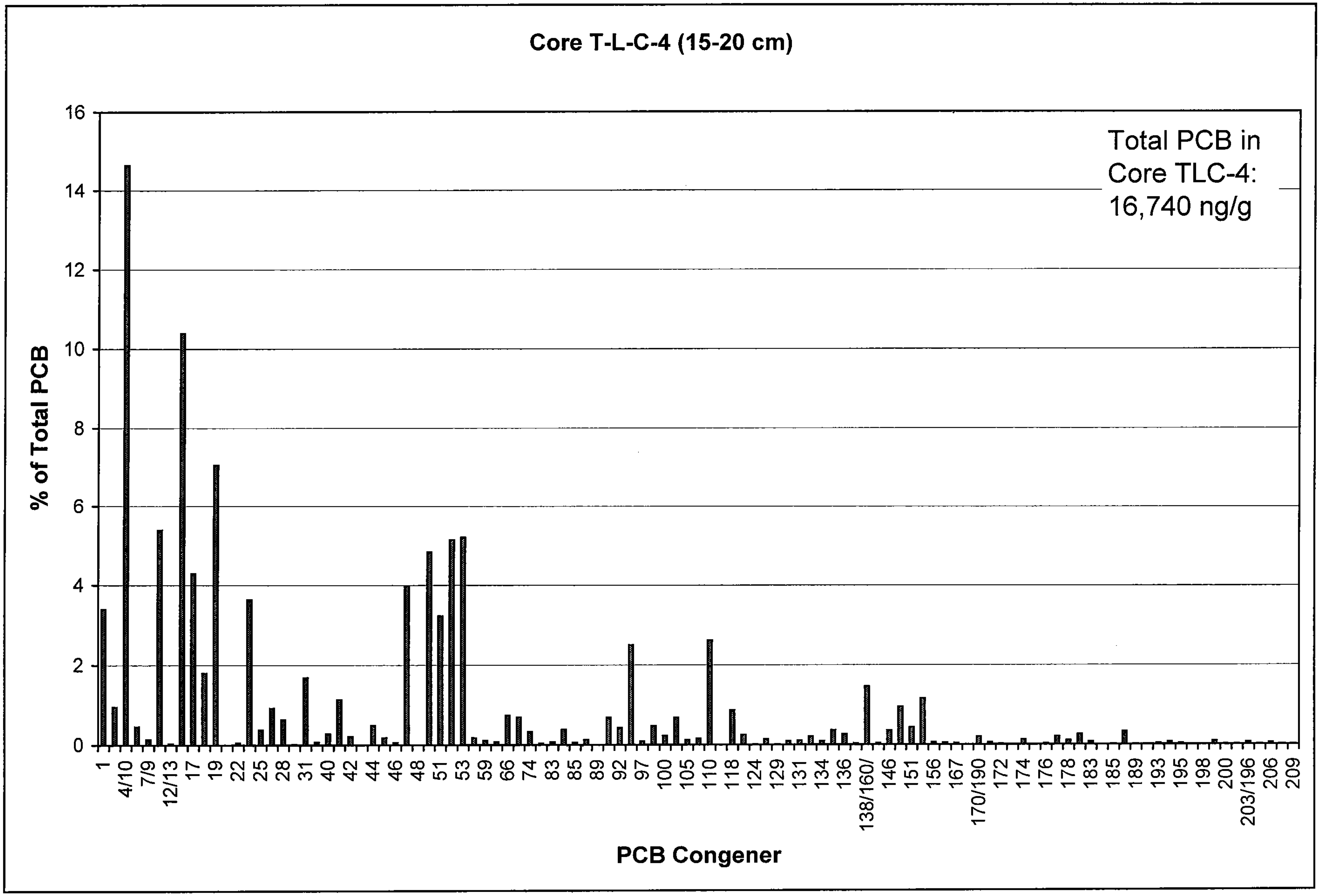
203/196
206
209



Core T-L-C-4 (15-20 cm)
Total PCB in Core TLC-4: 16,740 ng/g
% of Total PCB
0
2
4
6
8
10
12
14
16
1
4/10
7/9
12/13
17
19
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25
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53
59
66
74
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170/190
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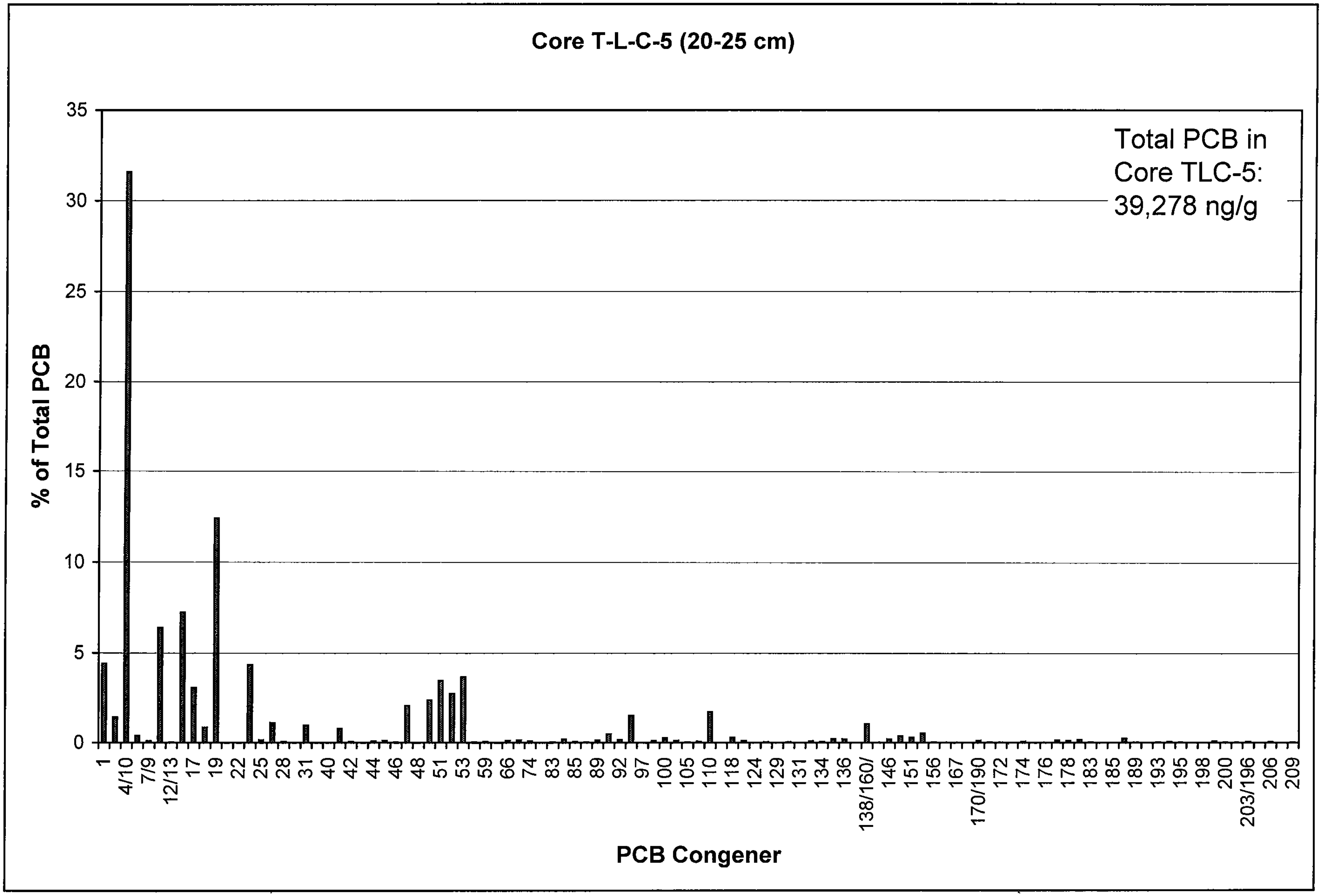
198
200
203/196
206
209
PCB Congener



Core T-L-C-5 (20-25 cm)
Total PCB in Core TLC-5: 39,278 ng/g
% of Total PCB
0
5
10
15
20
25
30
35
PCB Congener
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
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170/190
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198
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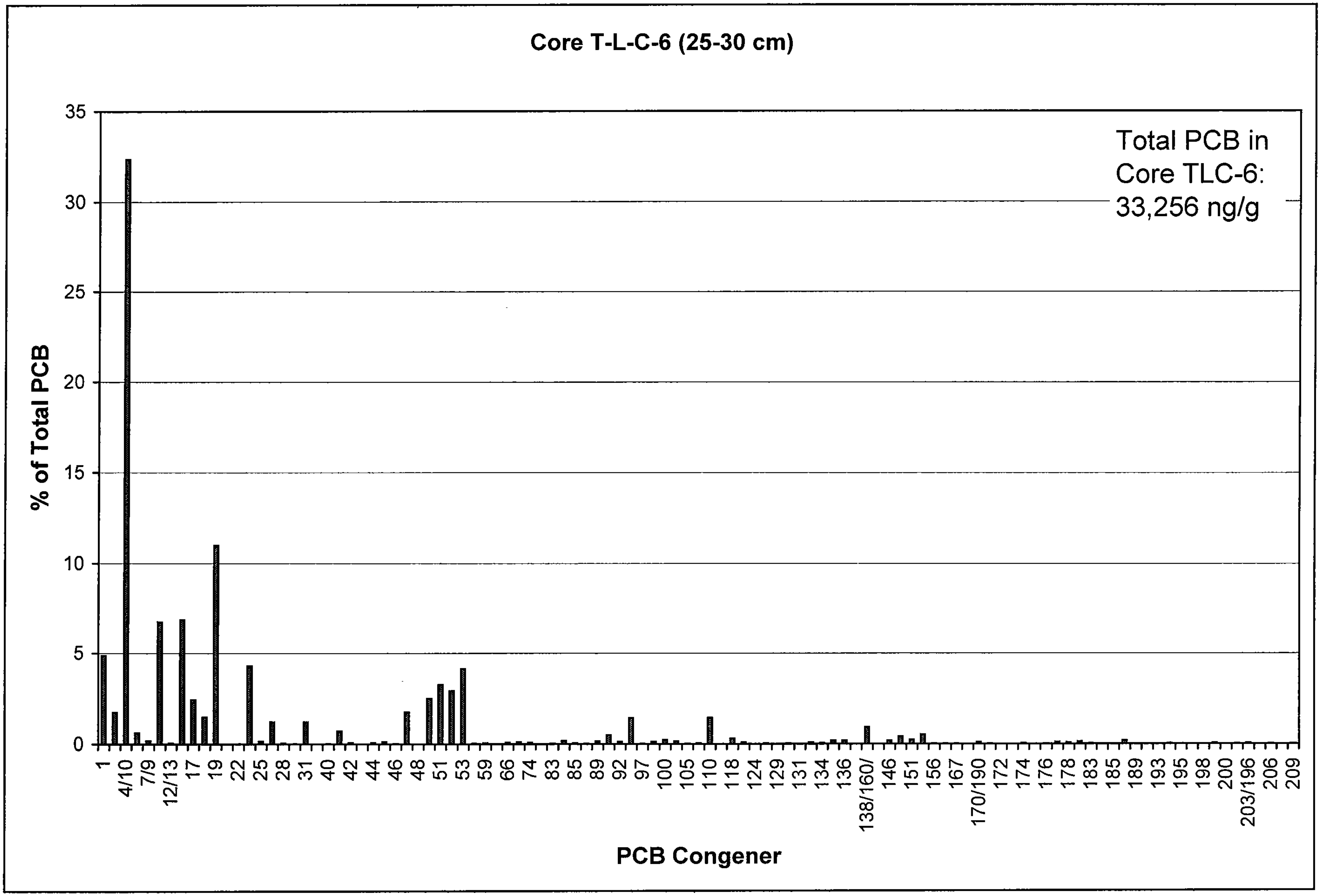
203/196
206
209



Core T-L-C-6 (25-30 cm)
Total PCB in Core TLC-6: 33,256 ng/g
% of Total PCB
0
5
10
15
20
25
30
35
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
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59
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167
170/190
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174
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193
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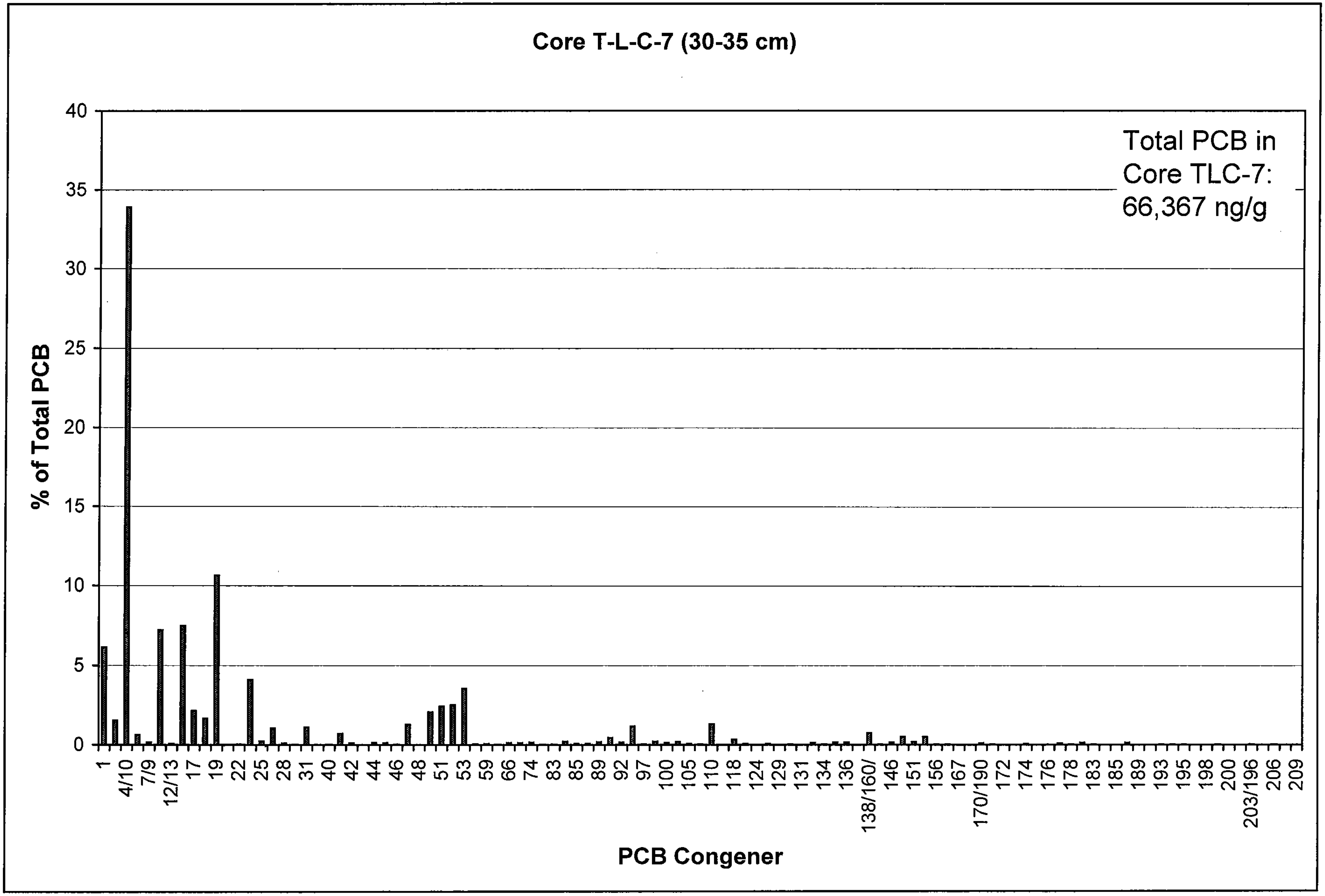
198
200
203/196
206
209
PCB Congener



Core T-L-C-7 (30-35 cm)
Total PCB in Core TLC-7: 66,367 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
35
40
1
4/10
7/9
12/13
17
19
22
25
28
31
40
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59
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74
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170/190
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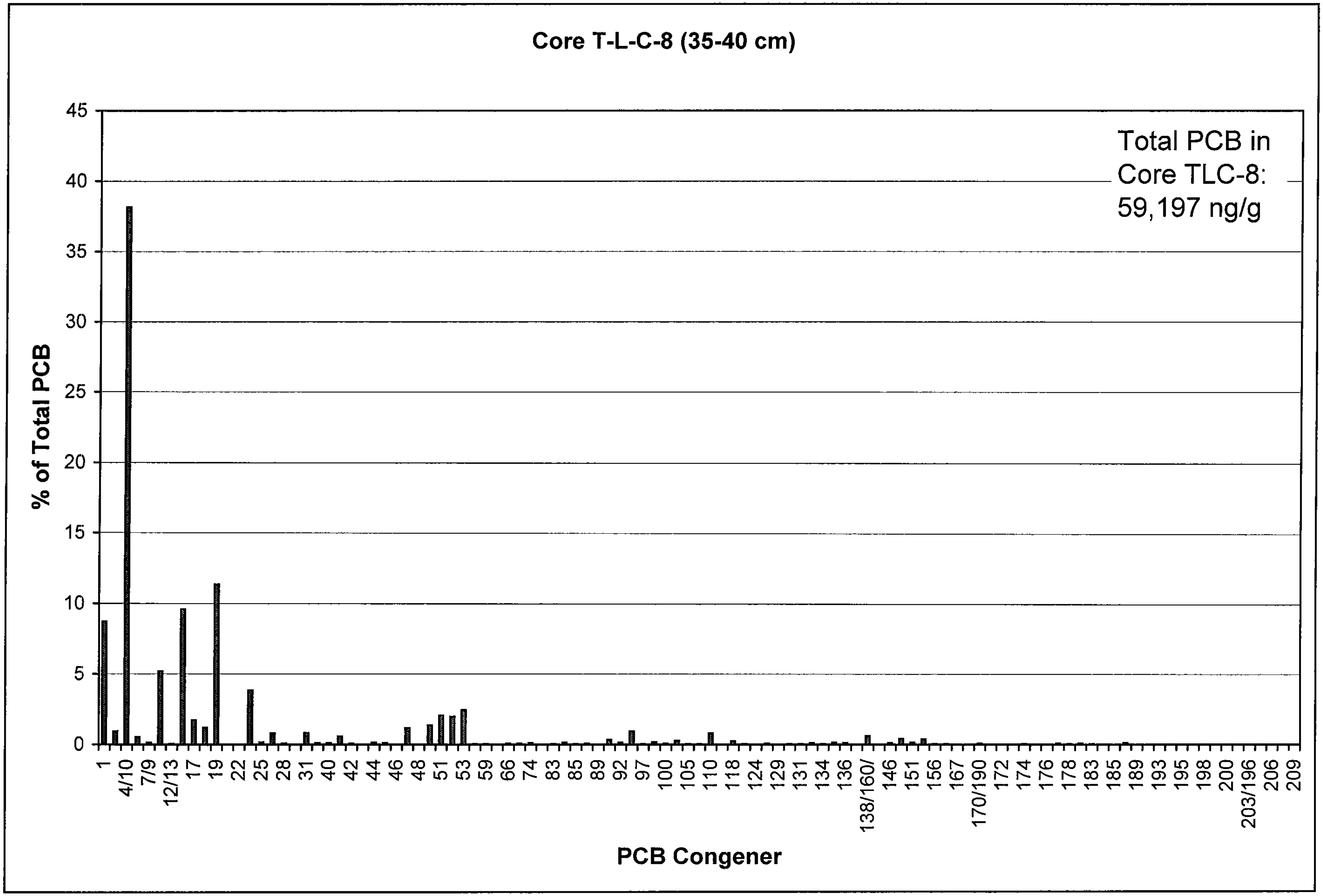
203/196
206
209


Core T-L-C-8 (35-40 cm)
Total PCB in Core TLC-8: 59,197 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
35
40
45
1
4/10
7/9
12/13
17
19
22
25
28
31
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42
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59
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170/190
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198
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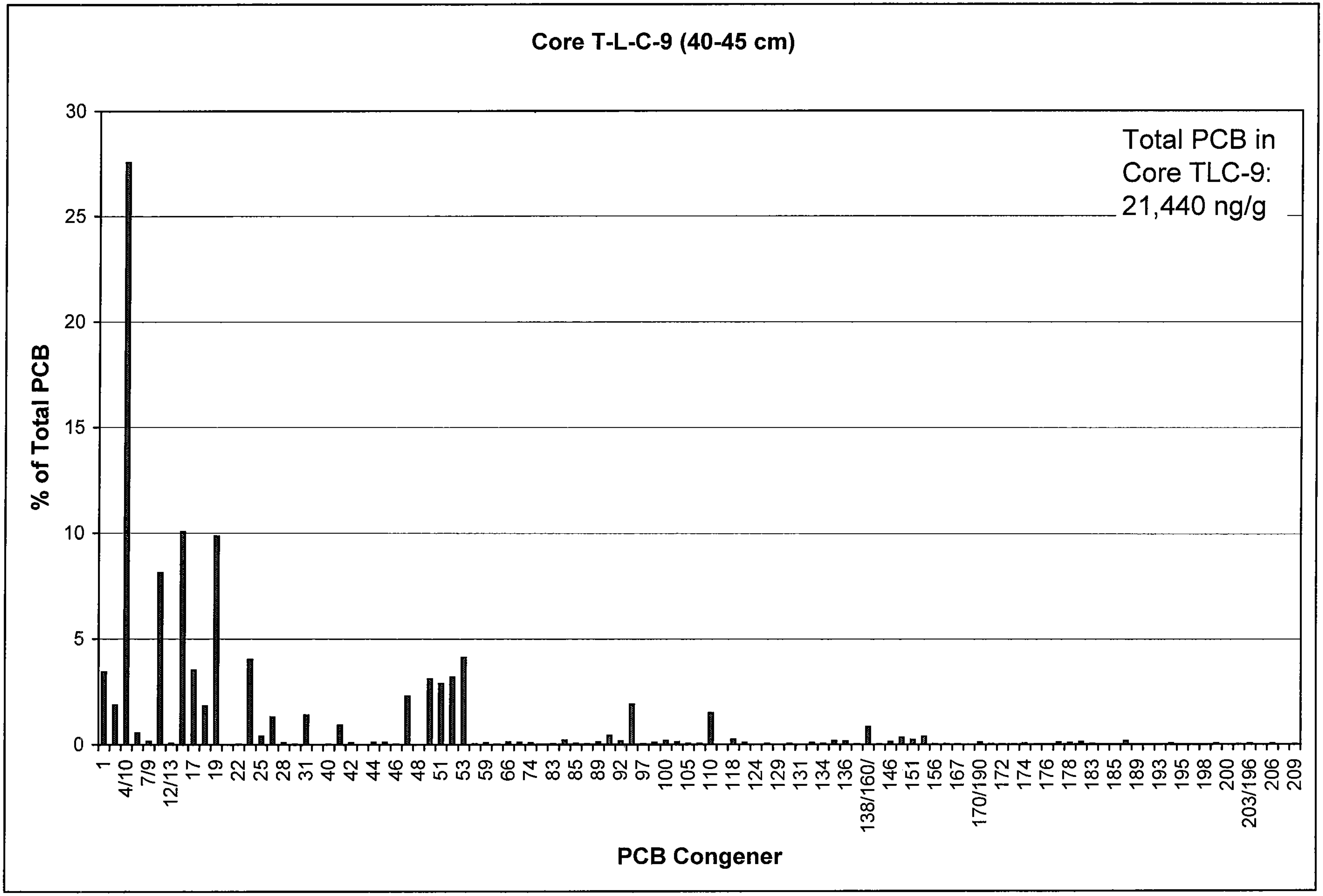
203/196
206
209


Core T-L-C-9 (40-45 cm)
Total PCB in Core TLC-9: 21,440 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
1
4/10
7/9
12/13
17
19
22
25
28
31
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42
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170/190
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203/196
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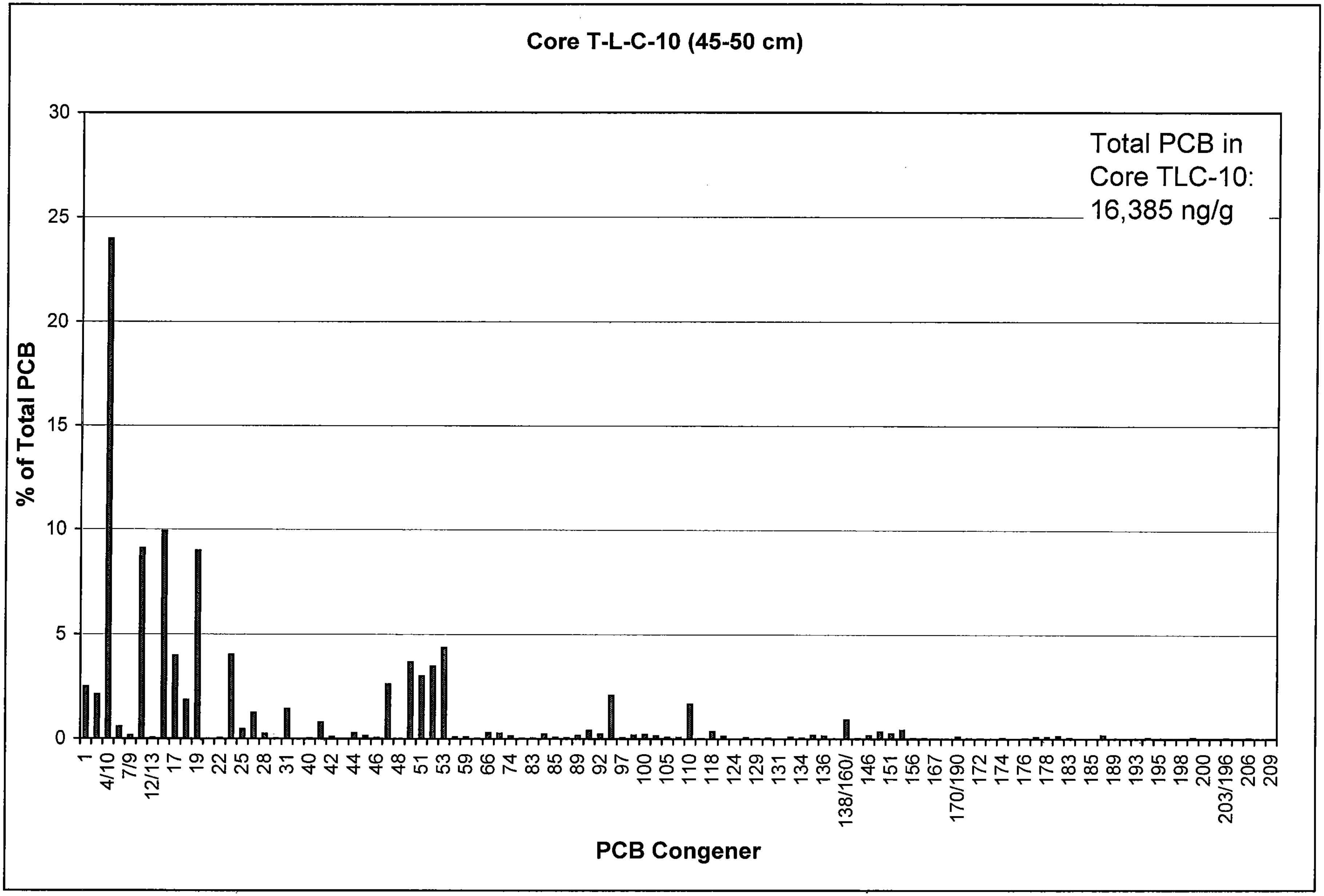
209


Core T-L-C-10 (45-50 cm)
Total PCB in Core TLC-10: 16,385 ng/g
% of Total PCB
30
25
20
15
10
5
0
1
4/10
7/9
12/13
17
19
22
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170/190
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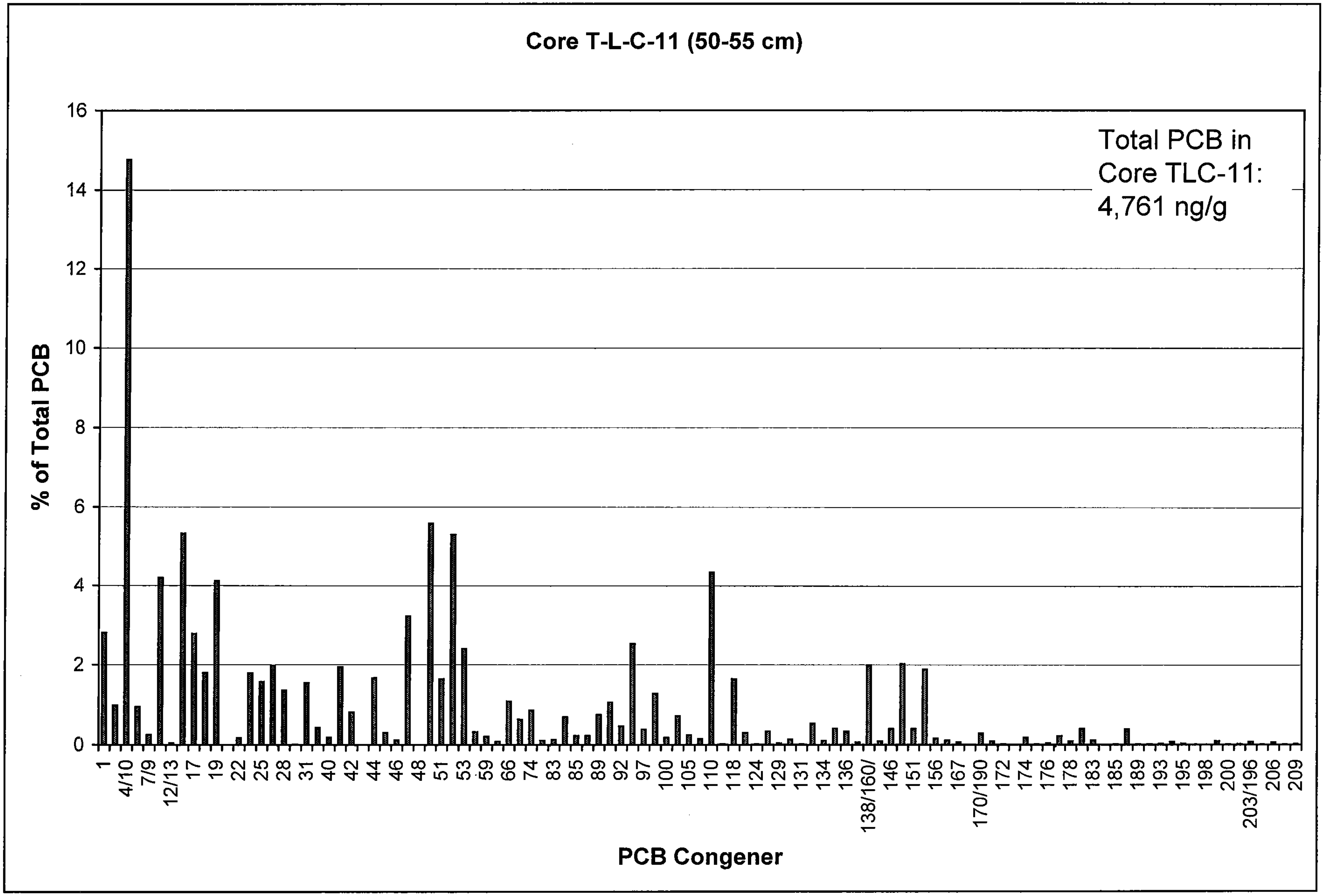
198
200
203/196
206
209
PCB Congener



Core T-L-C-11 (50-55 cm)
Total PCB in Core TLC-11: 4,761 ng/g
% of Total PCB
0
2
4
6
8
10
12
14
16
PCB Congener
1
4/10
7/9
12/13
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59
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170/190
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203/196
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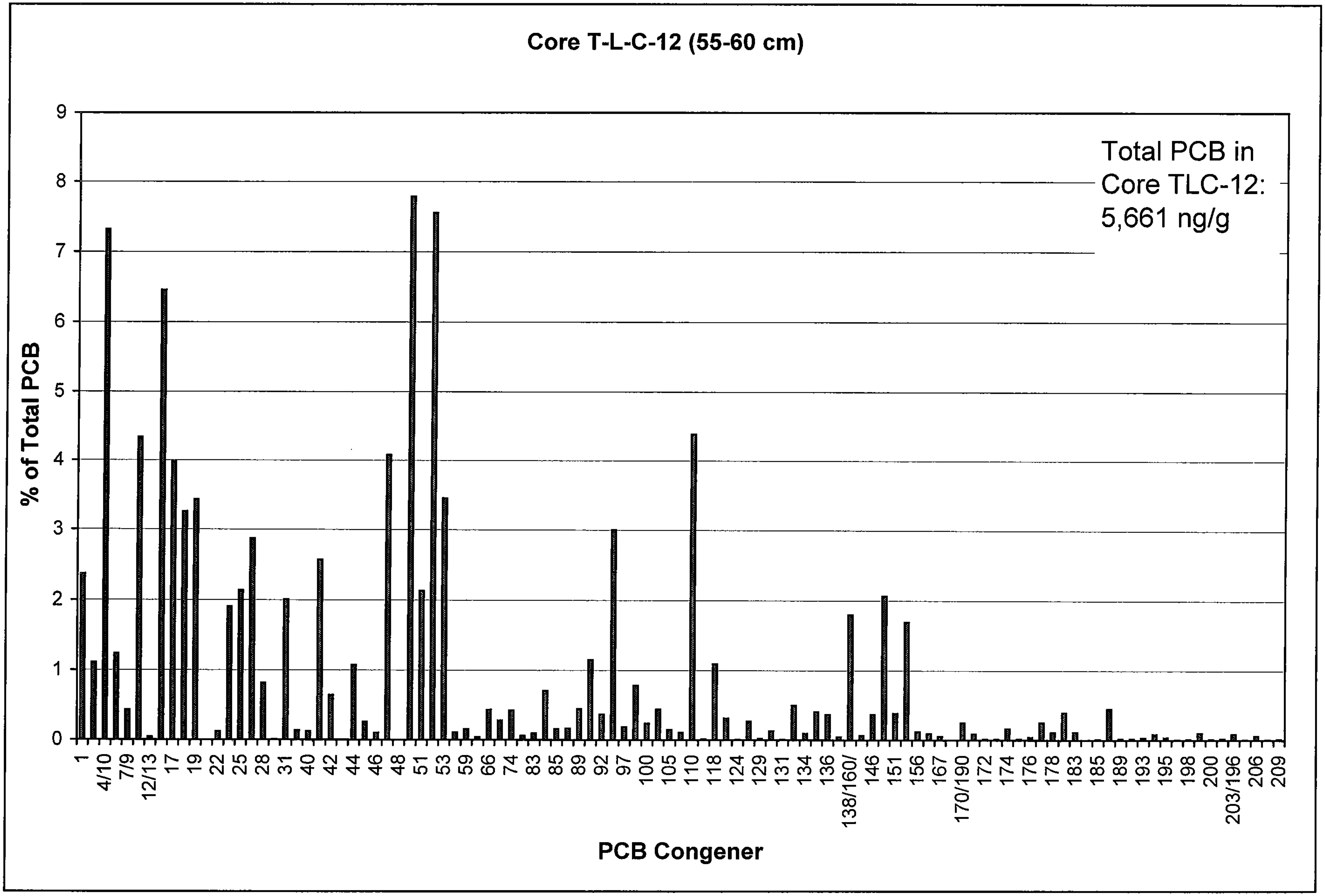
209


Core T-L-C-12 (55-60 cm)
Total PCB in Core TLC-12: 5,661 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
1
4/10
7/9
12/13
17
19
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25
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59
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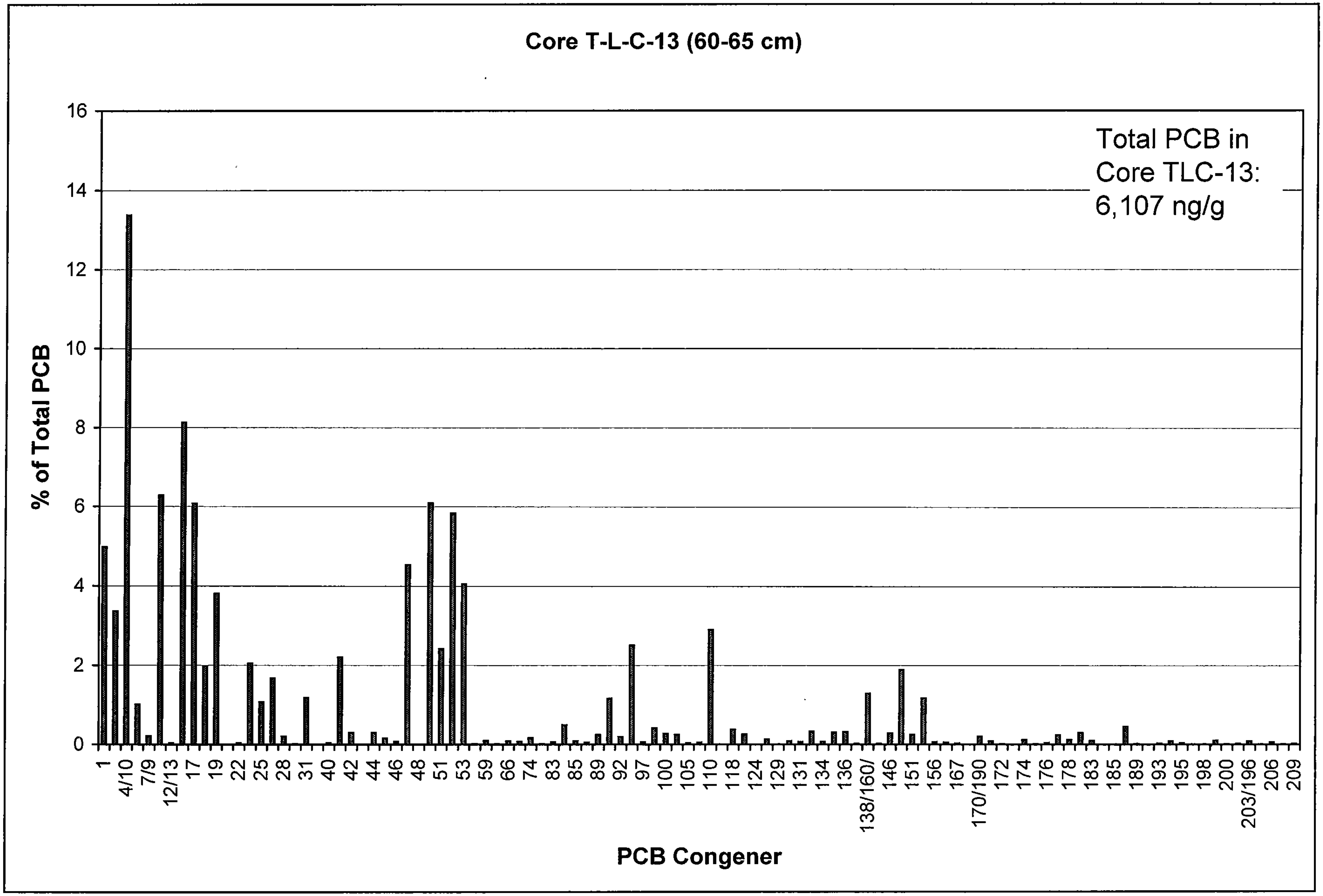
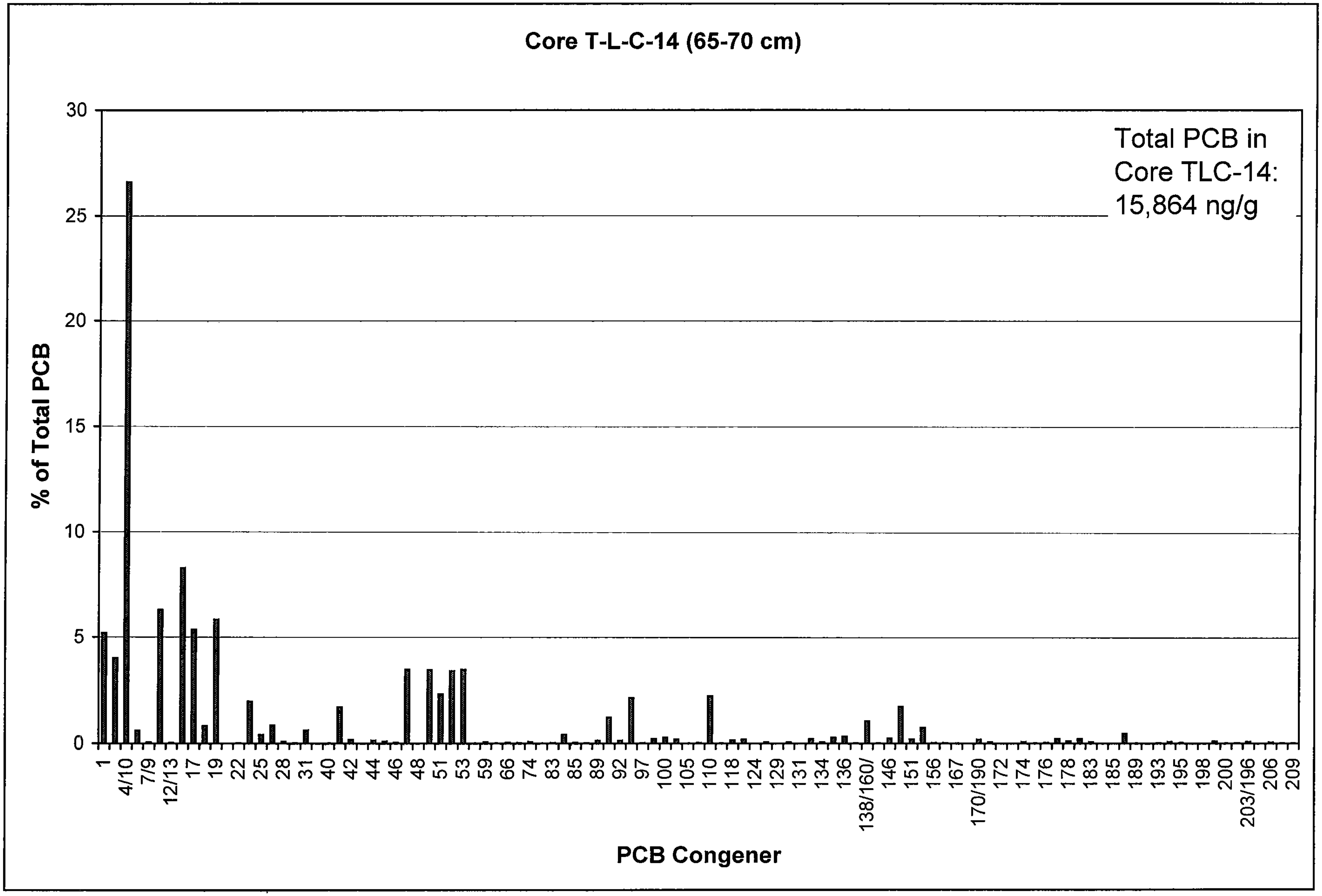
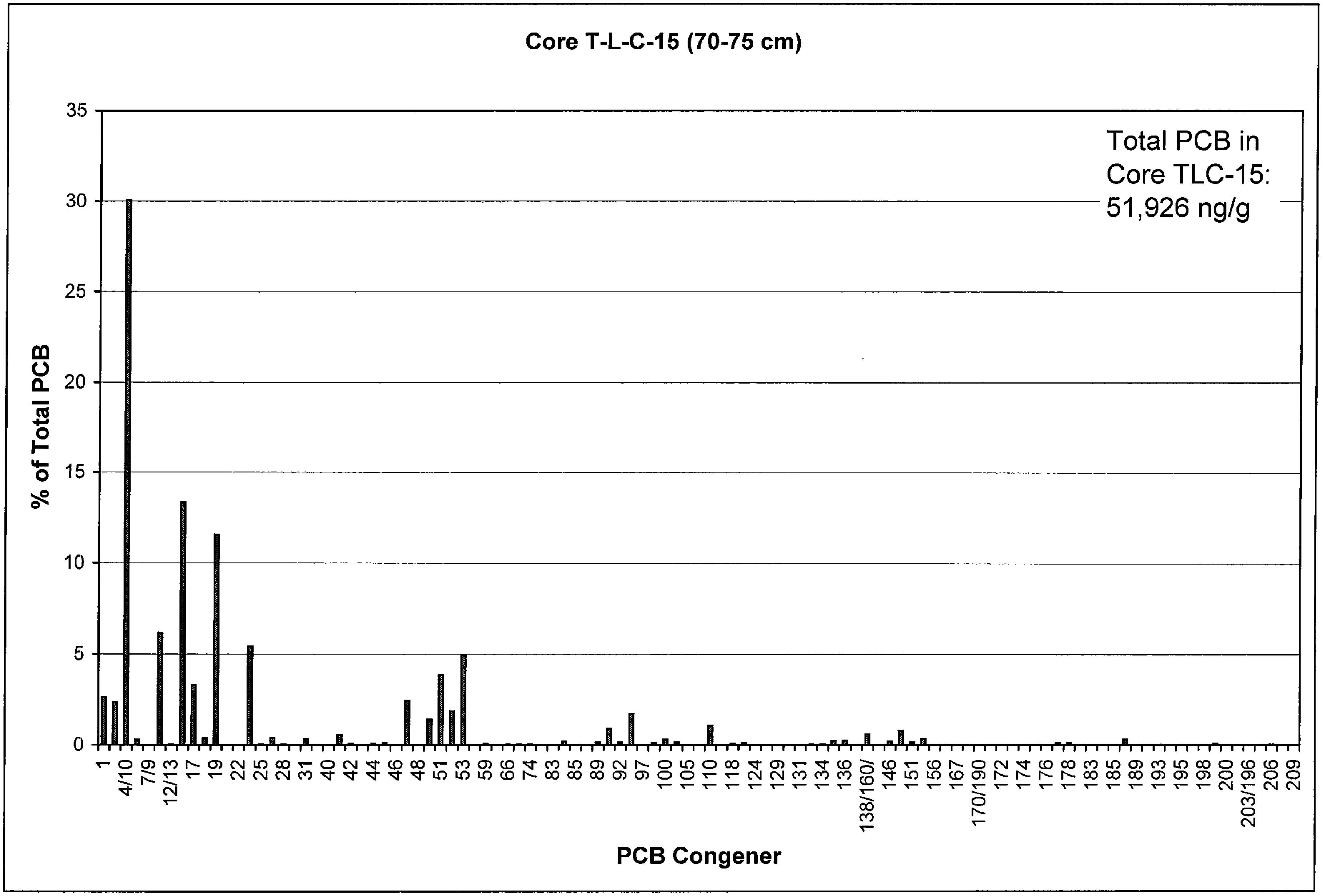
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

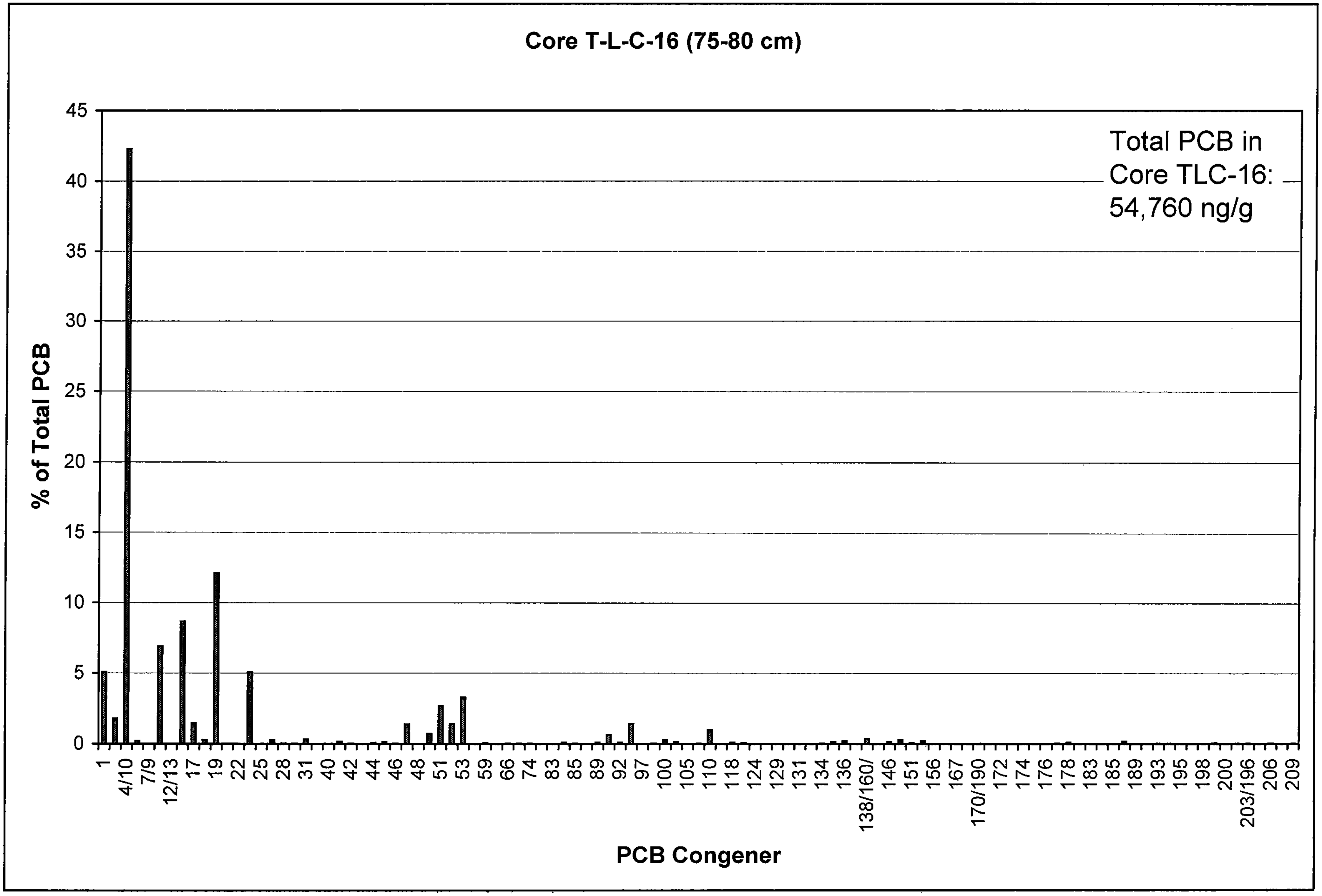


Core T-L-C-13 (60-65 cm)
% of Total PCB
PCB Congener
Total PCB in
Core TLC-13:
6,107 ng/g

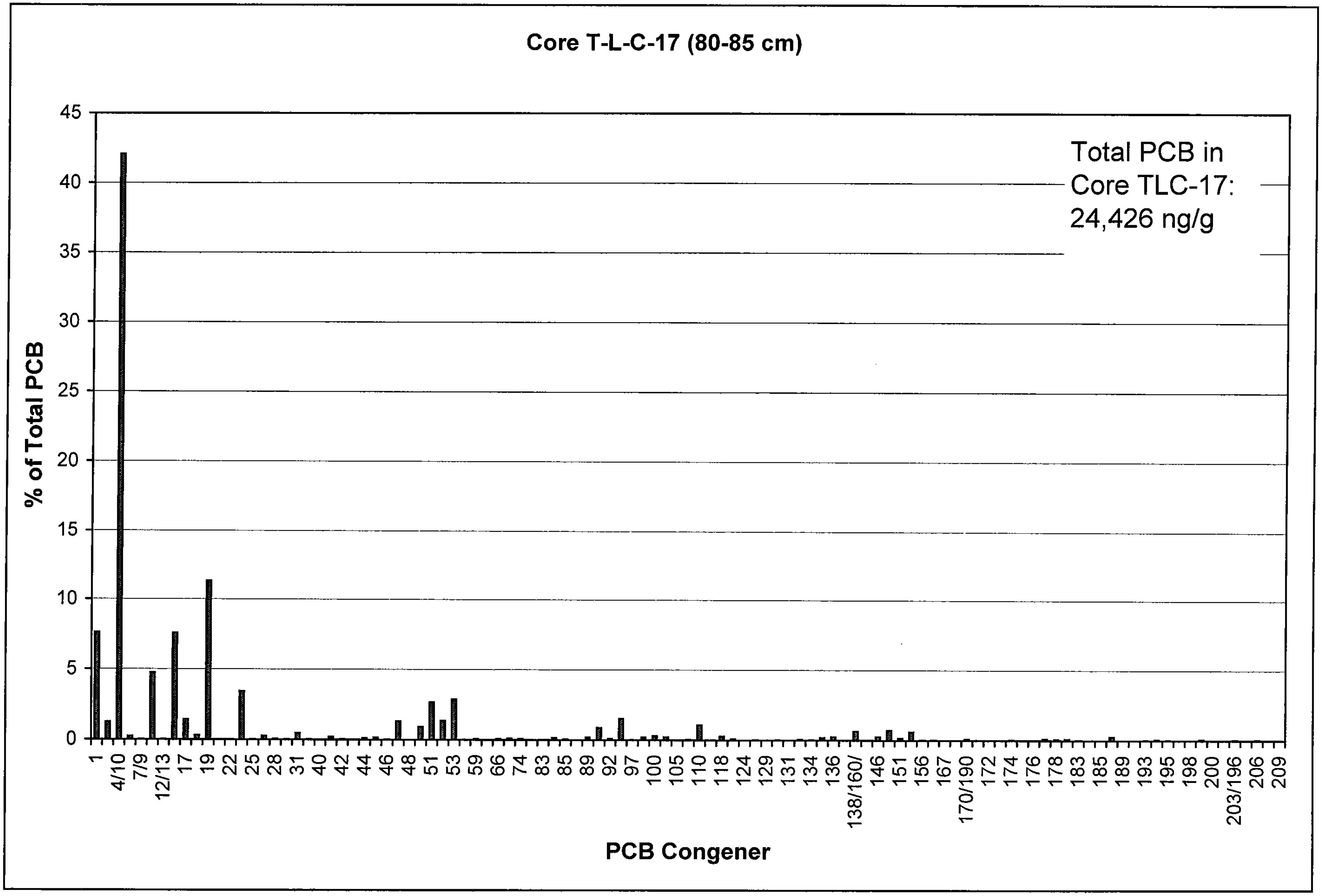

Core T-L-C-14 (65-70 cm)
Total PCB in
Core TLC-14:
15,864 ng/g
% of Total PCB
30
25
20
15
10
5
0
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

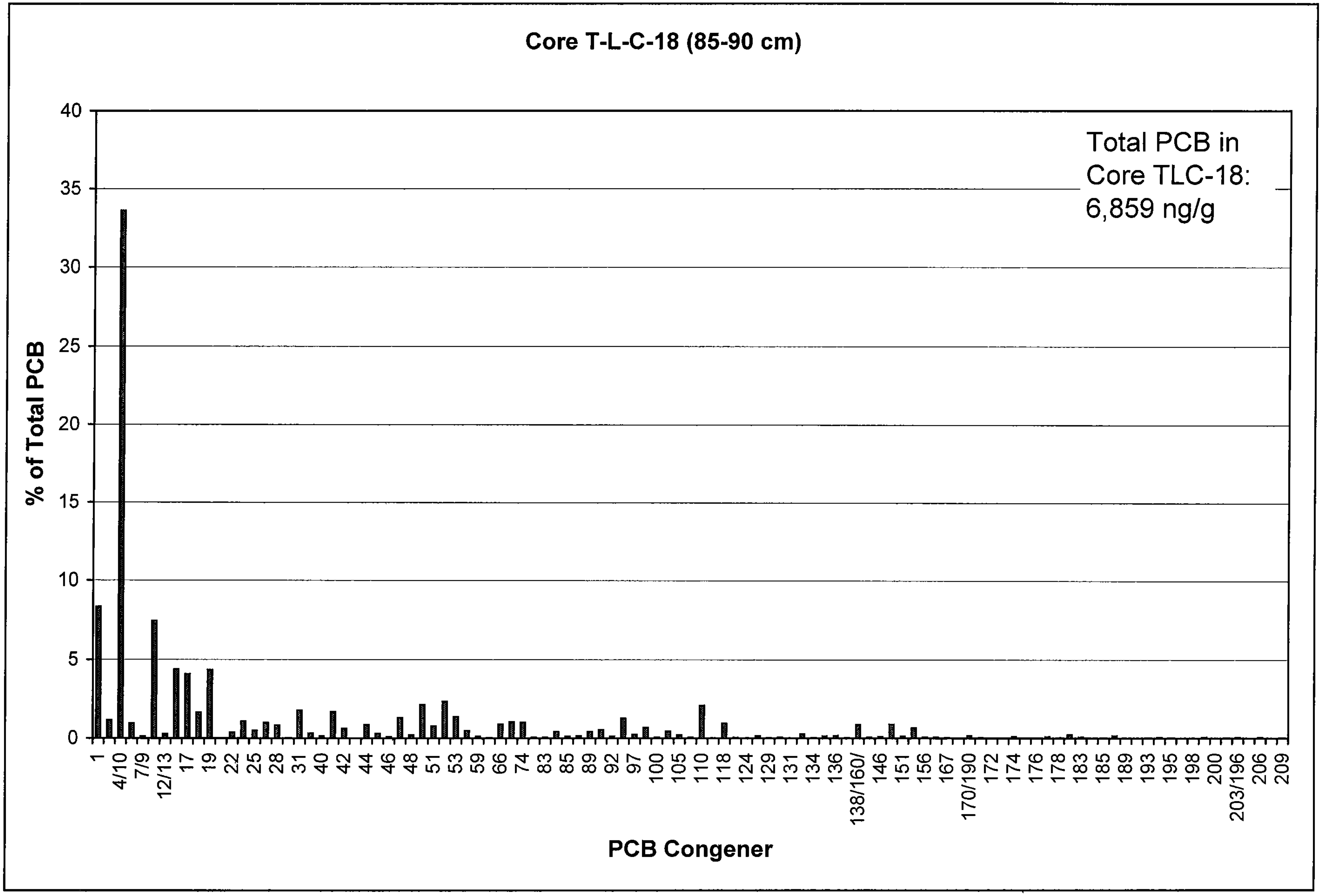


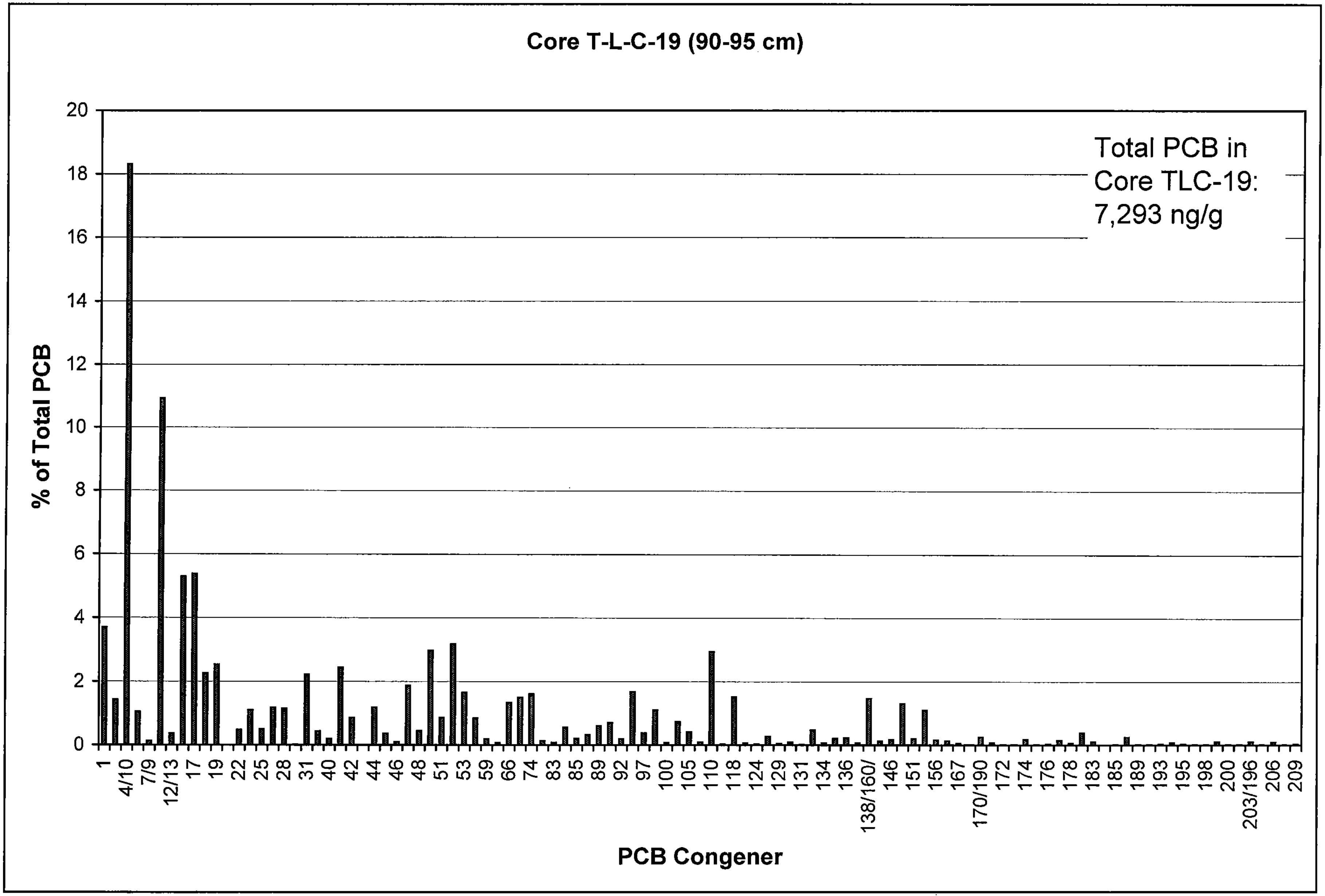
Core T-L-C-15 (70-75 cm)
Total PCB in
Core TLC-15:
51,926 ng/g
% of Total PCB
0
5
10
15
20
25
30
35
1
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

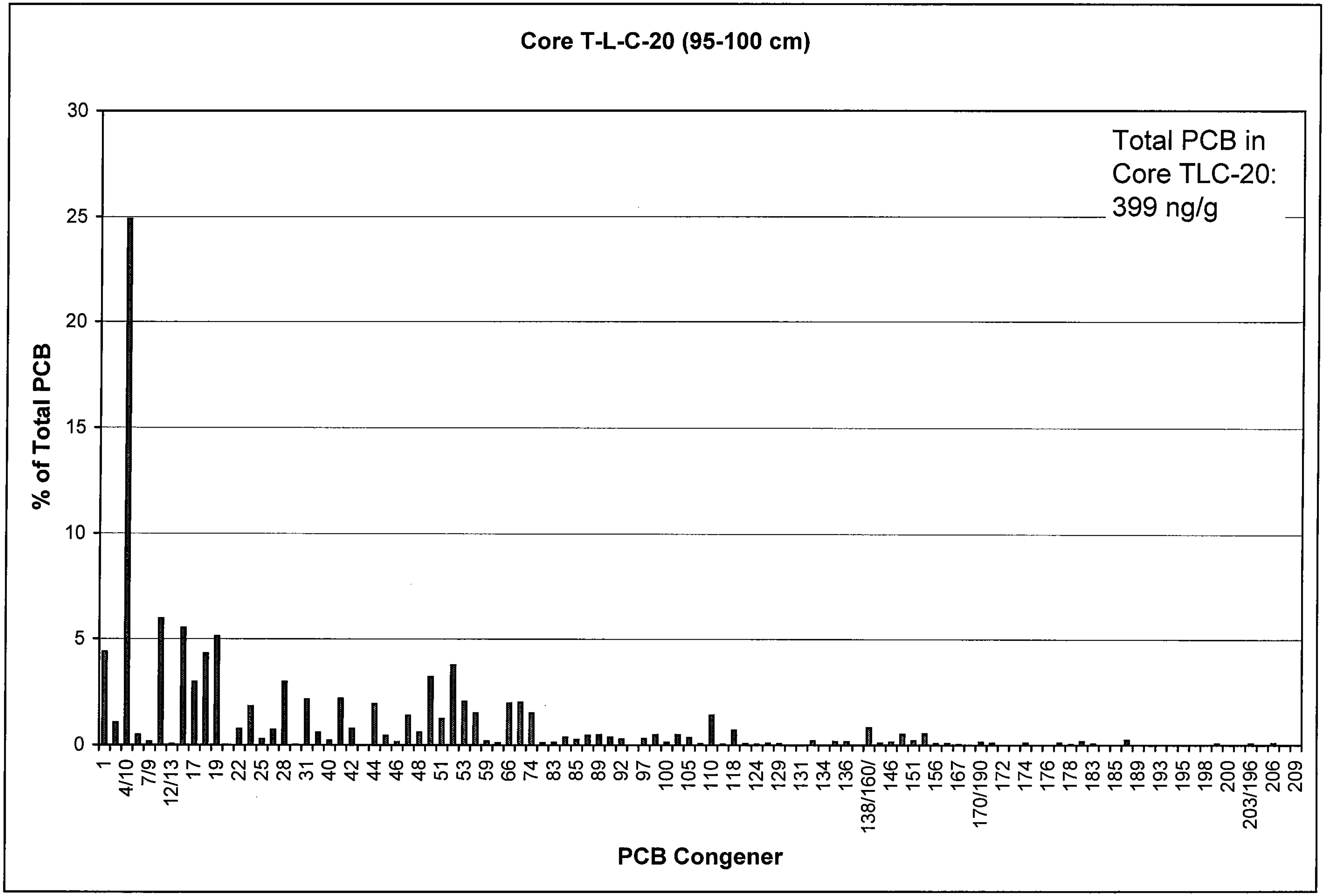


Core T-L-C-16 (75-80 cm)
Total PCB in
Core TLC-16:
54,760 ng/g
% of Total PCB
PCB Congener
45
40
35
30
25
20
15
10
5
0
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

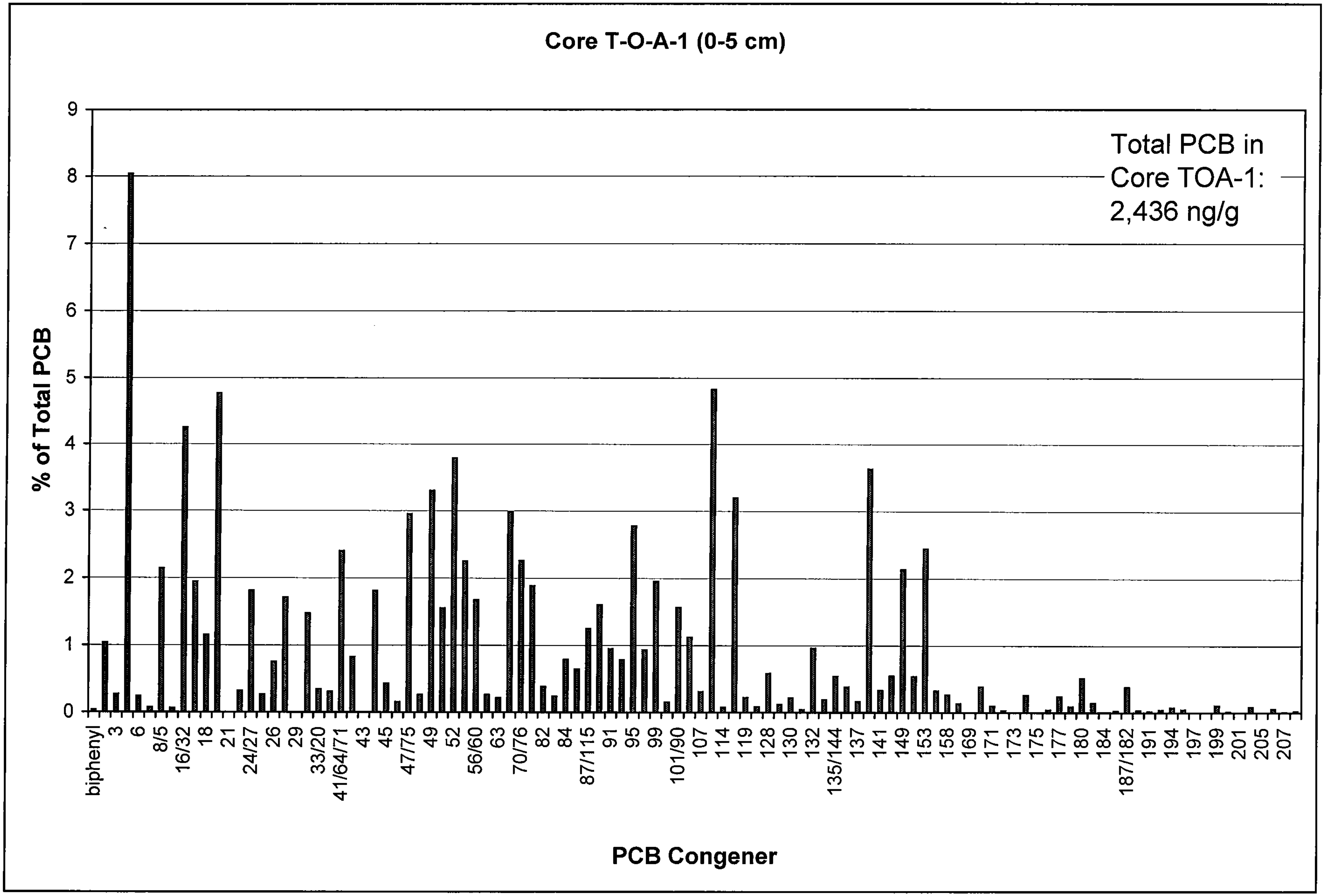

Core T-L-C-17 (80-85 cm)
Total PCB in Core TLC-17: 24,426 ng/g
% of Total PCB
PCB Congener
45
40
35
30
25
20
15
10
5
0
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209

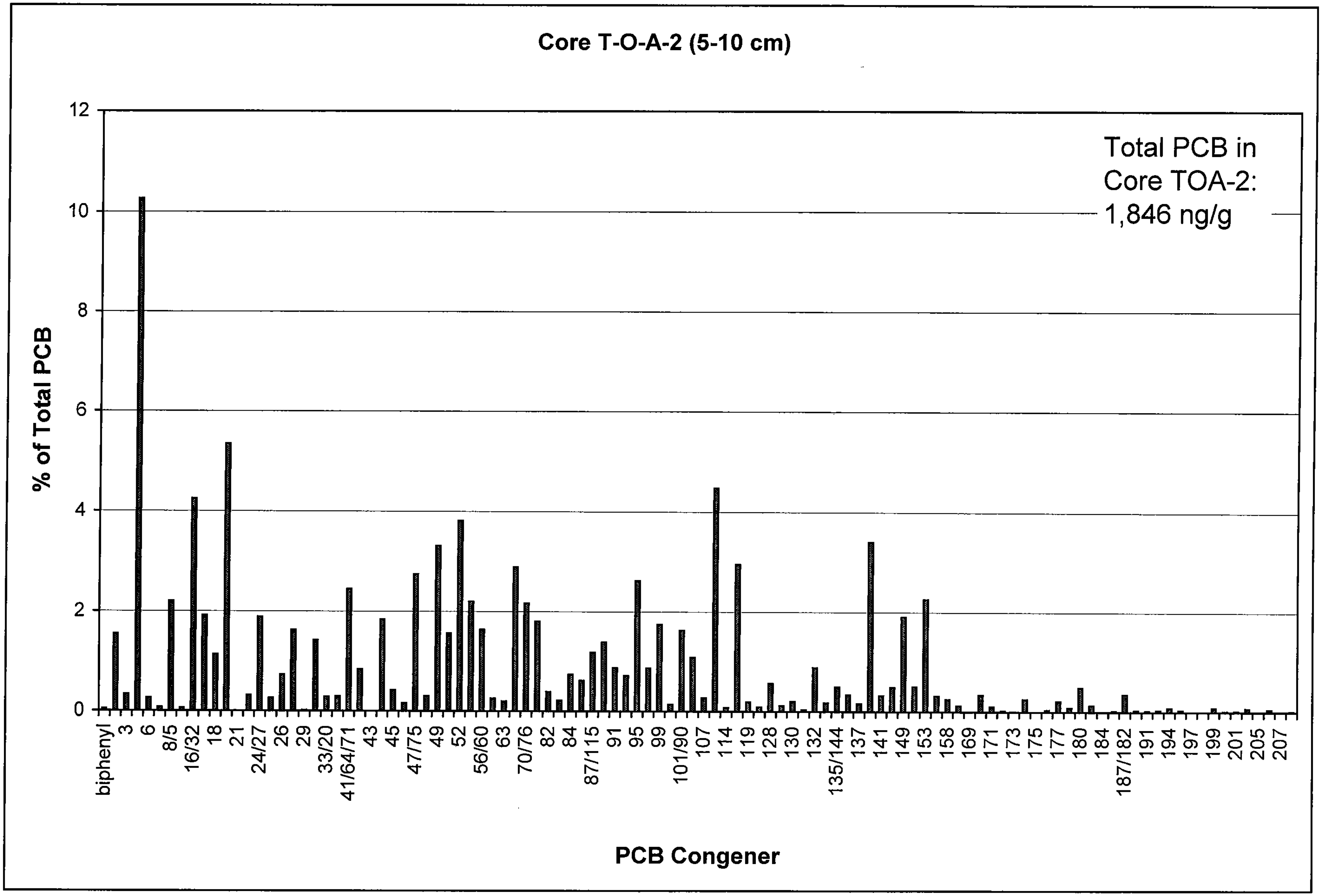

Core T-L-C-18 (85-90 cm)
Total PCB in
Core TLC-18:
6,859 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
35
40
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209


Core T-L-C-19 (90-95 cm)
Total PCB in Core TLC-19: 7,293 ng/g
% of Total PCB
20
18
16
14
12
10
8
6
4
2
0
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209
PCB Congener

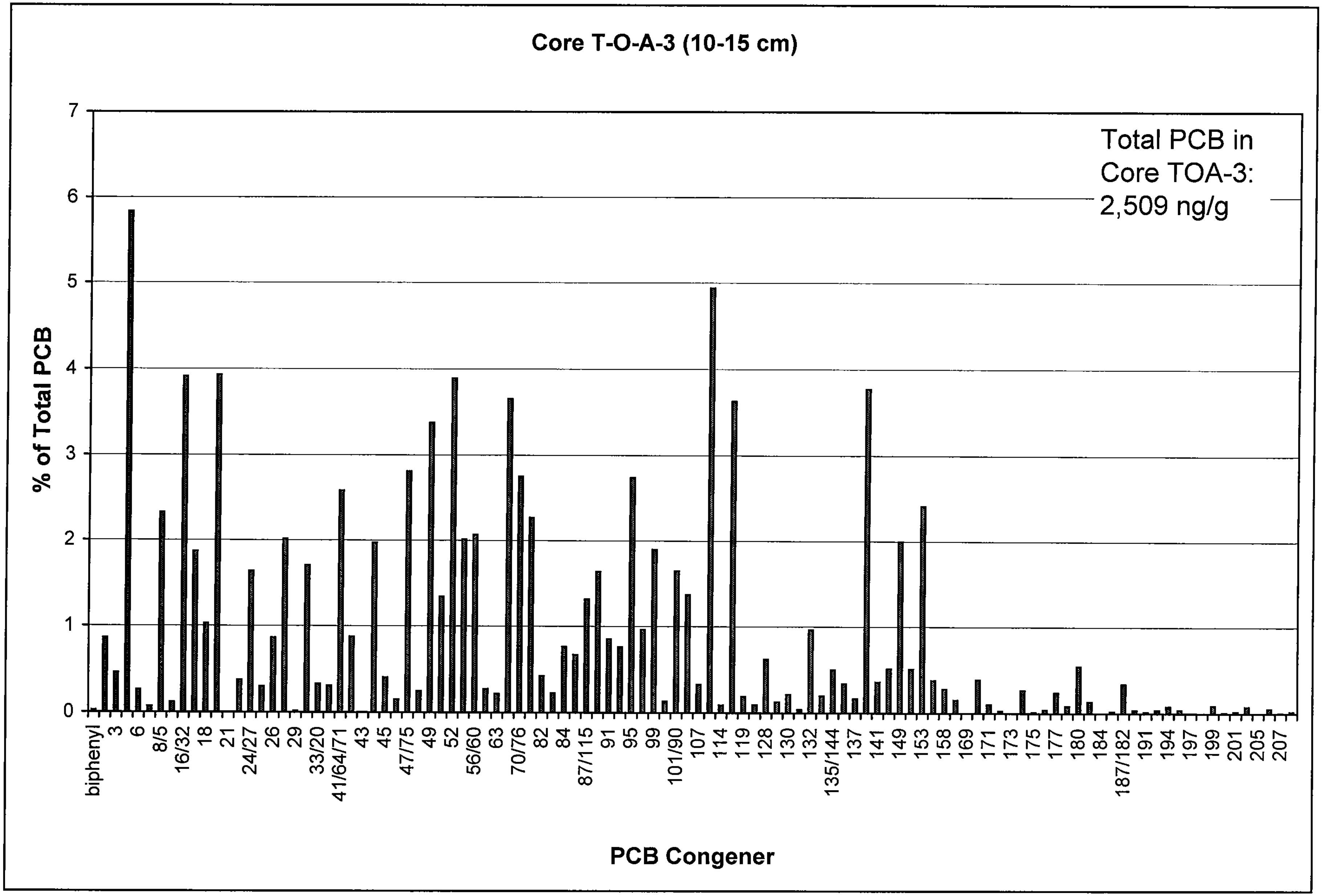


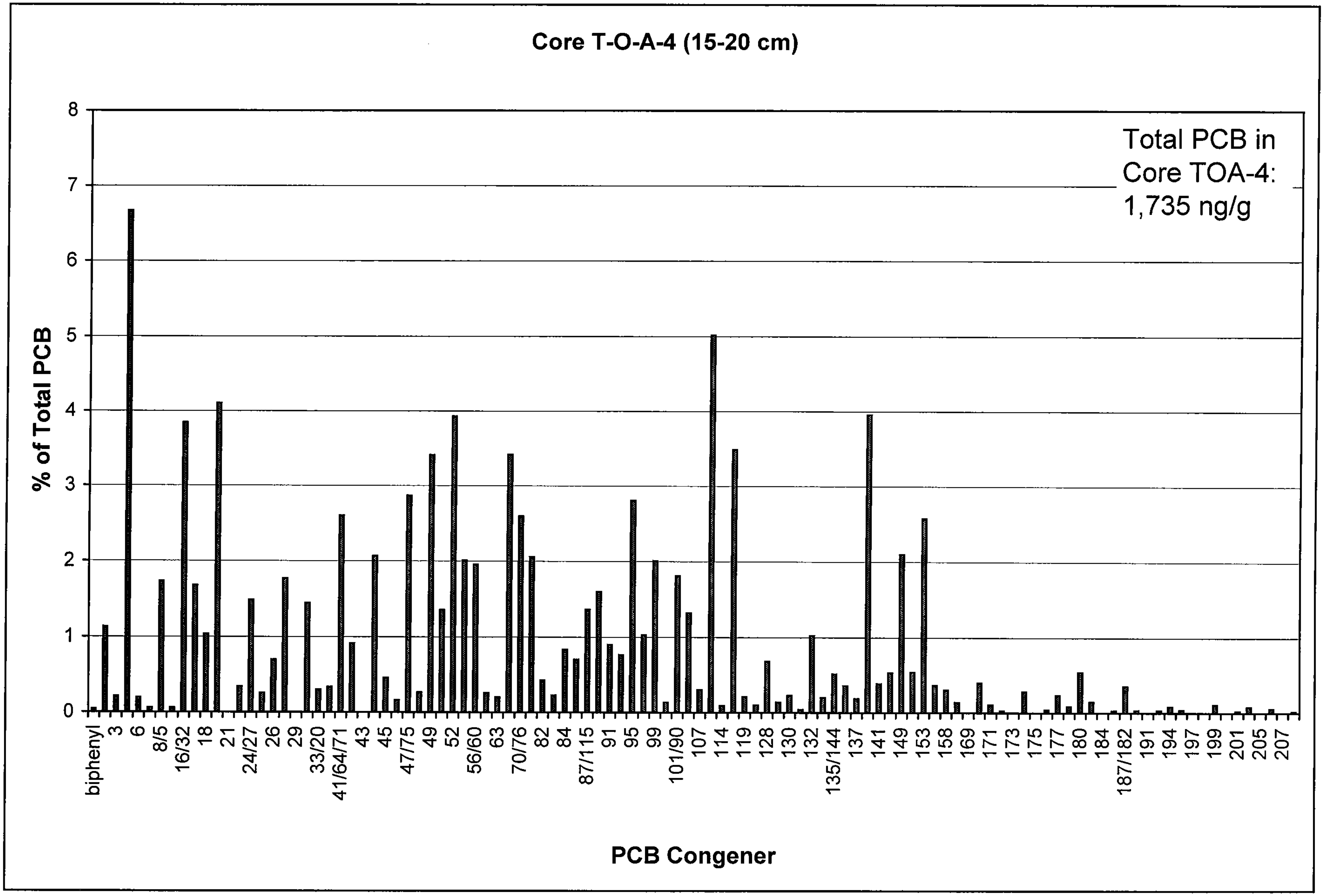
Core T-L-C-20 (95-100 cm)
Total PCB in Core TLC-20: 399 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
1
4/10
7/9
12/13
17
19
22
25
28
31
40
42
44
46
48
51
53
59
66
74
83
85
89
92
97
100
105
110
118
124
129
131
134
136
138/160/
146
151
156
167
170/190
172
174
176
178
183
185
189
193
195
198
200
203/196
206
209


Core T-O-A-1 (0-5 cm)
Total PCB in Core TOA-1: 2,436 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

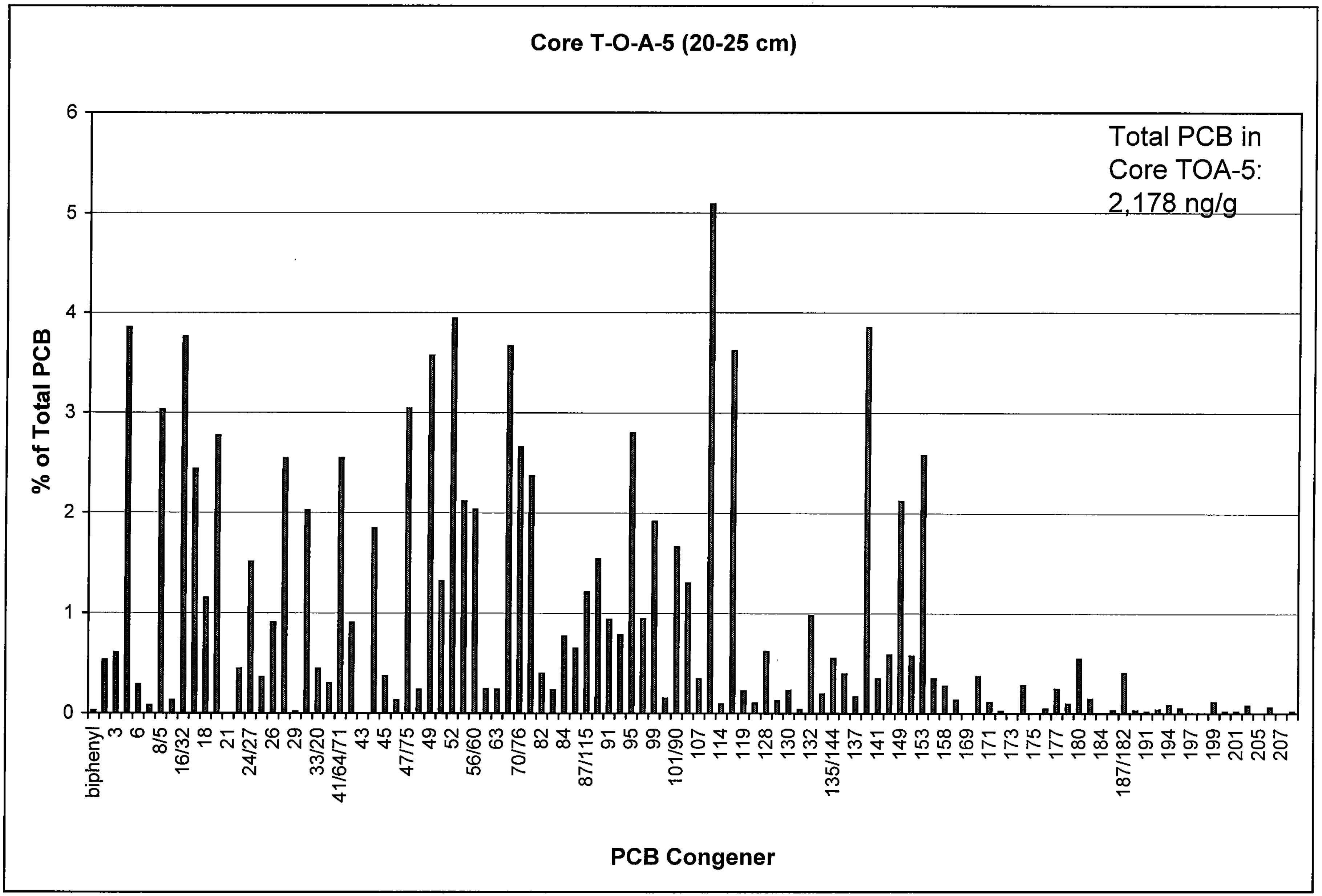


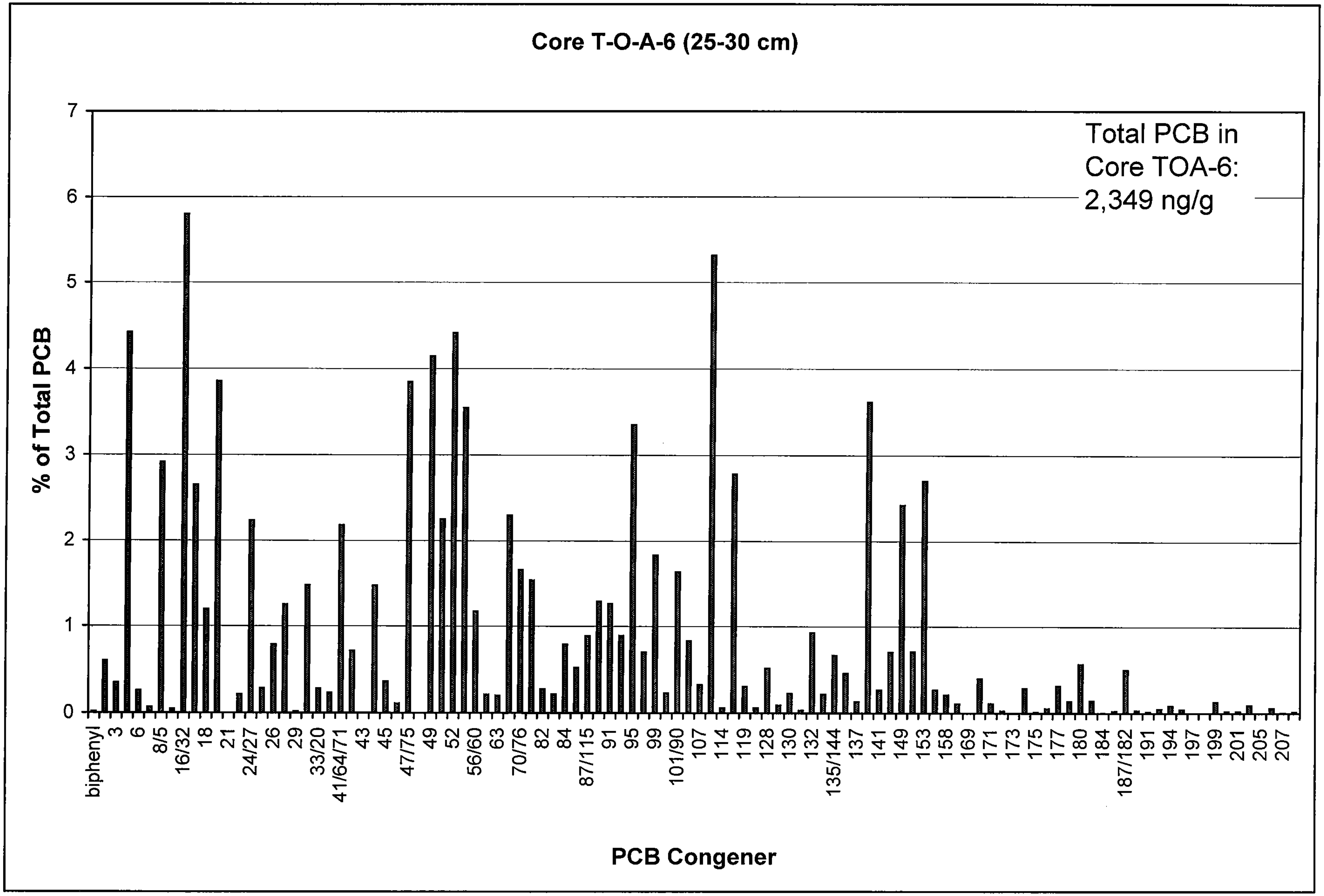
Core T-O-A-2 (5-10 cm)
Total PCB in Core TOA-2: 1,846 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

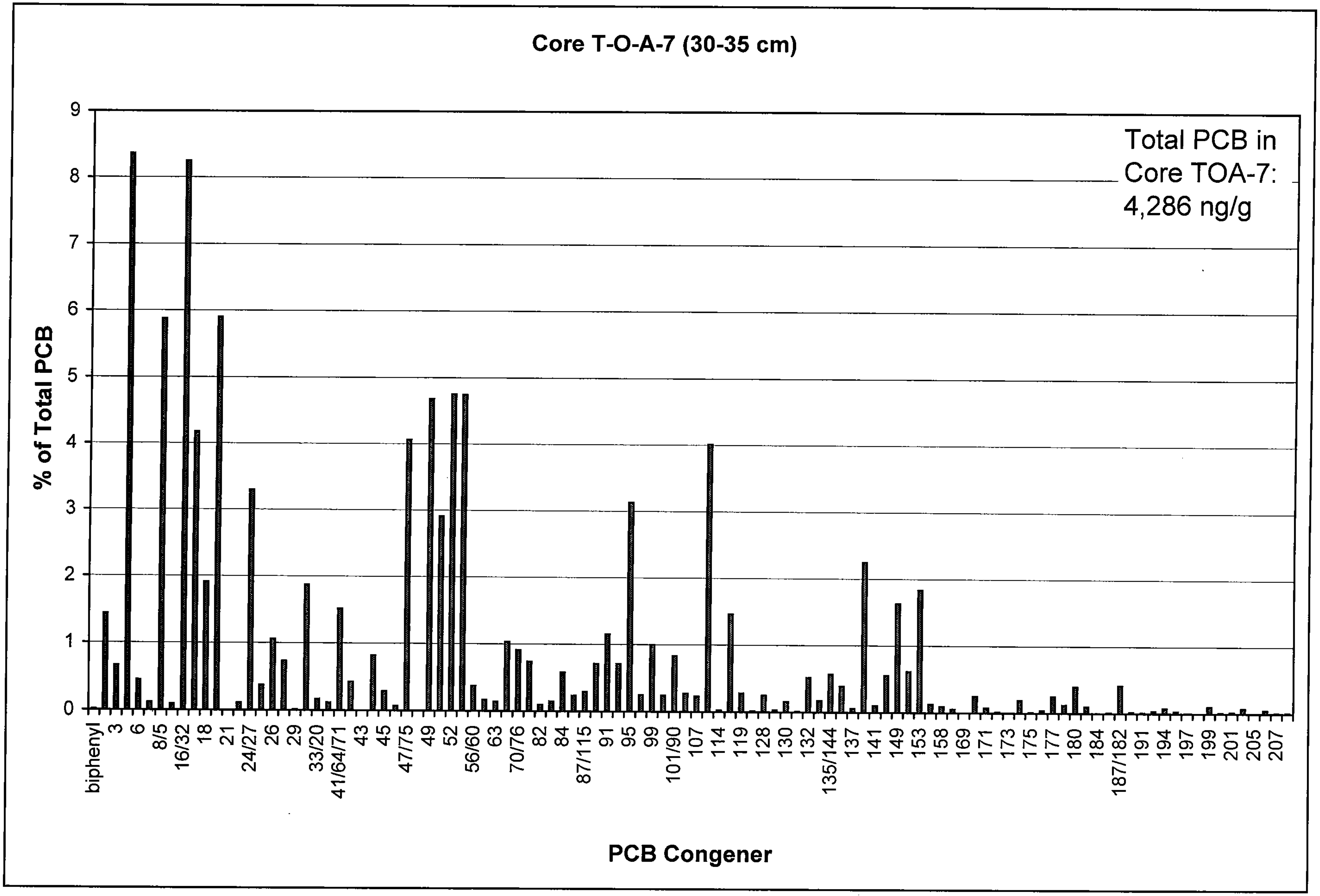

Core T-O-A-3 (10-15 cm)
Total PCB in Core TOA-3: 2,509 ng/g
% of Total PCB
0
1
2
3
4
5
6
7
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener



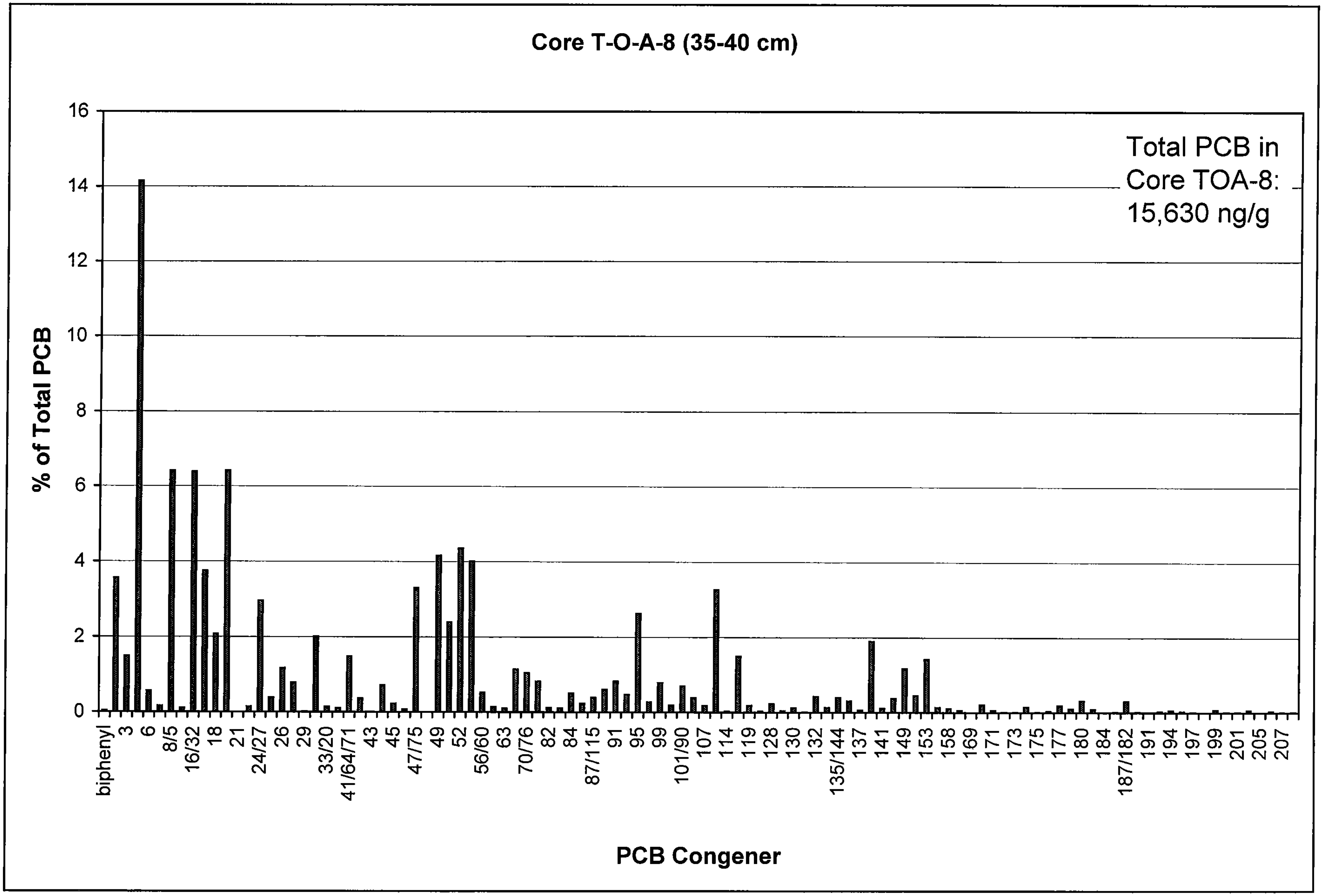
Core T-O-A-4 (15-20 cm)
Total PCB in Core TOA-4: 1,735 ng/g
% of Total PCB
8
7
6
5
4
3
2
1
0
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

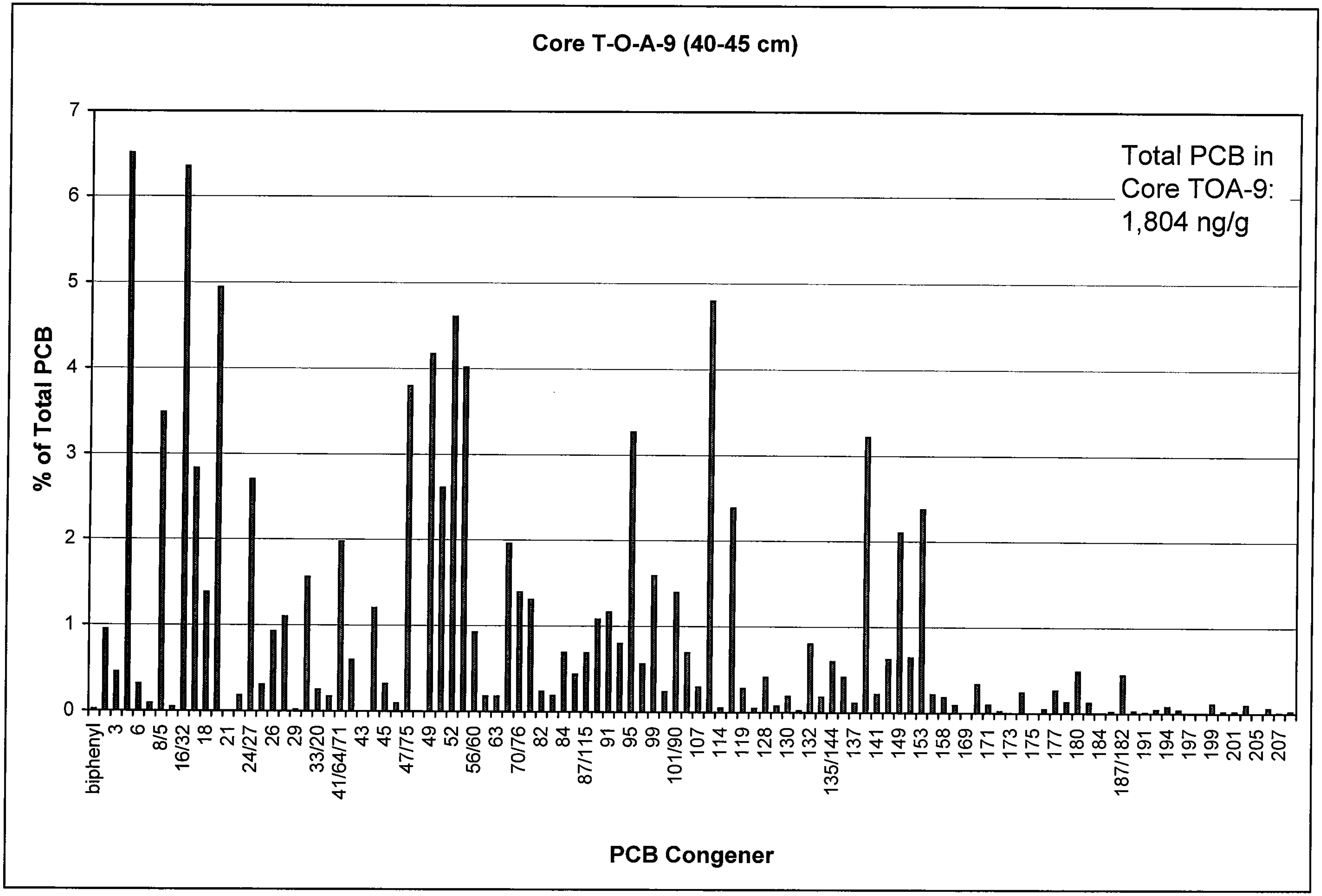

Core T-O-A-5 (20-25 cm)
Total PCB in Core TOA-5: 2,178 ng/g
% of Total PCB
0
1
2
3
4
5
6
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener


Core T-O-A-6 (25-30 cm)
Total PCB in Core TOA-6: 2,349 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

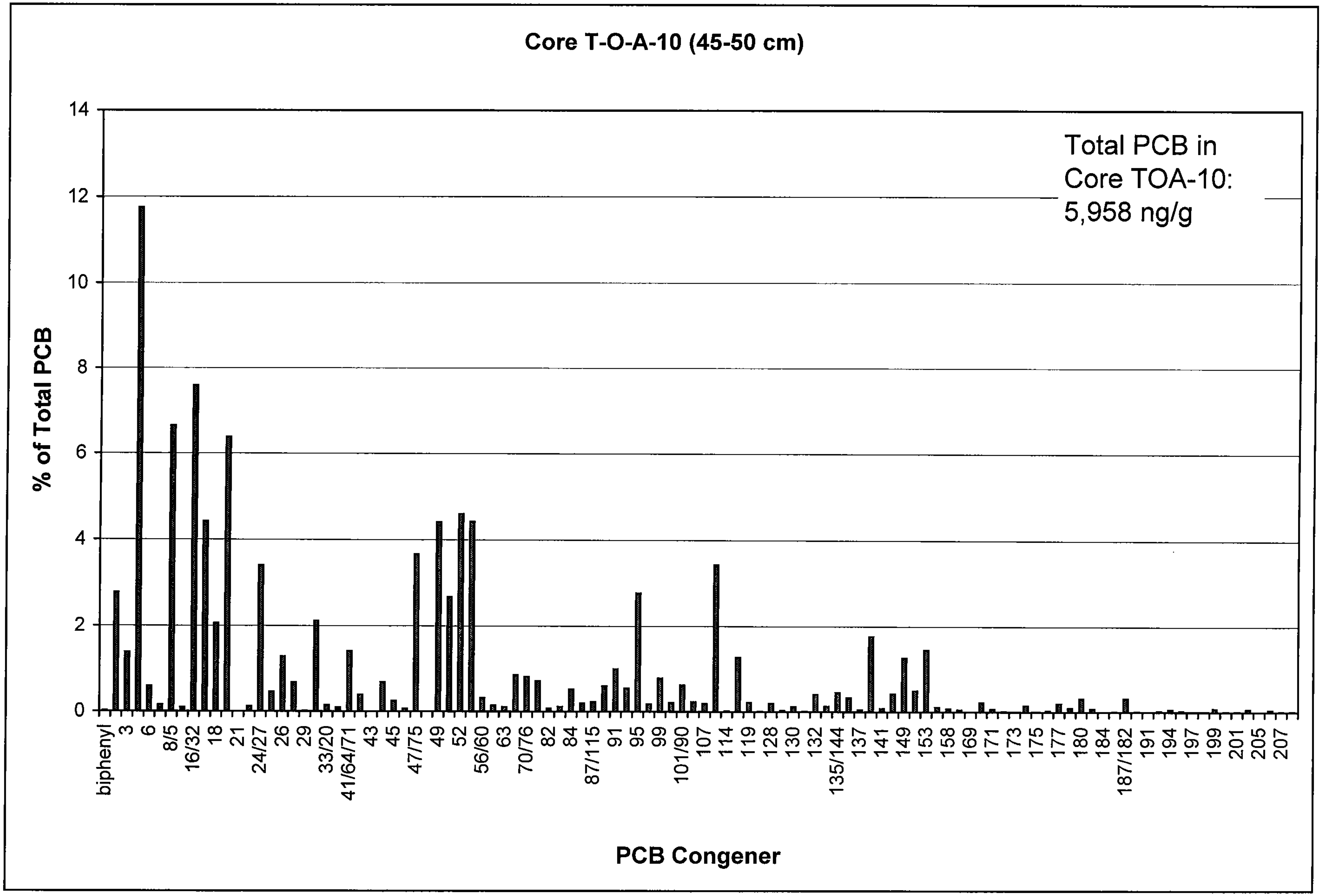


Core T-O-A-7 (30-35 cm)
Total PCB in Core TOA-7: 4,286 ng/g
% of Total PCB
0
1
2
3
4
5
6
7
8
9
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

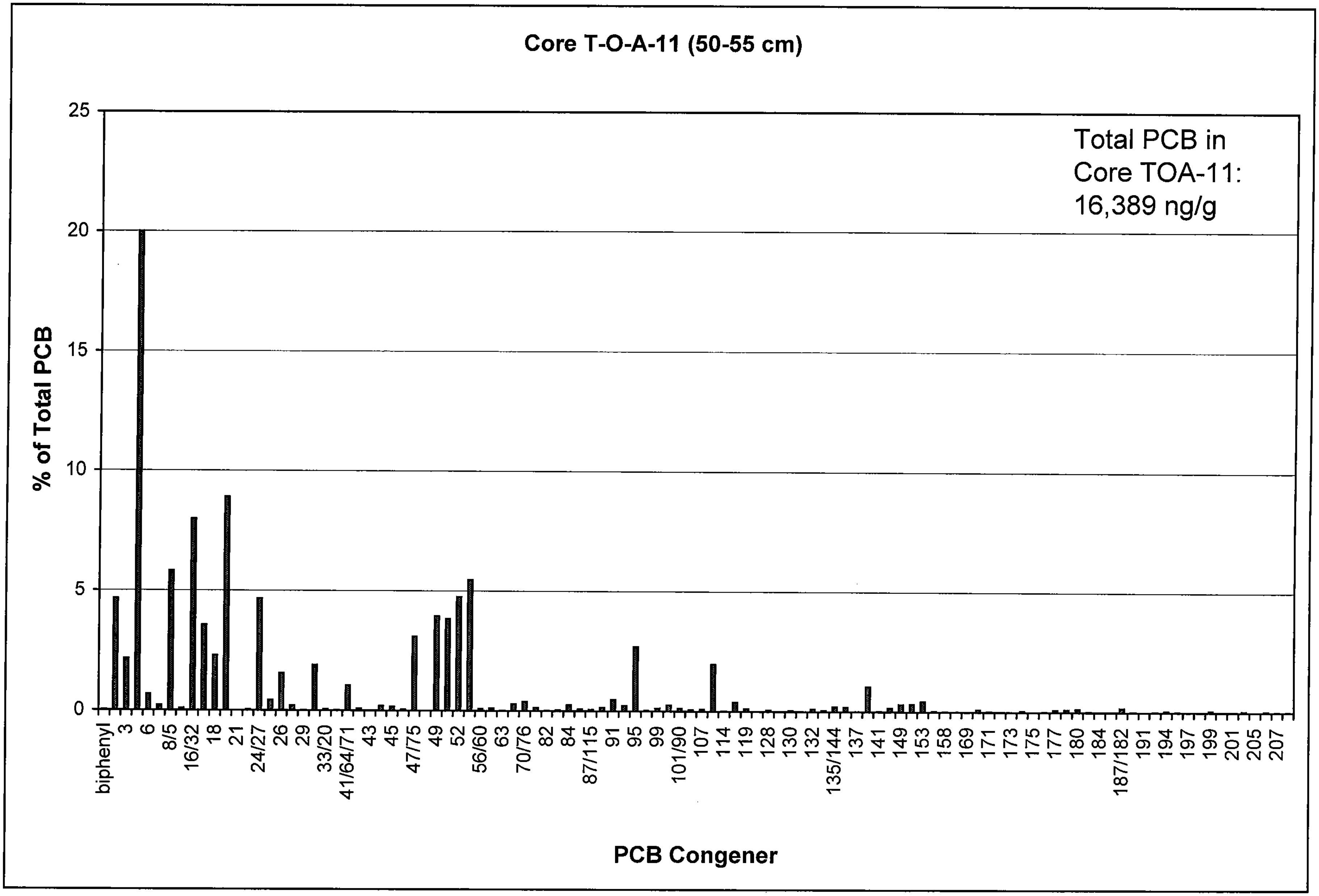

Core T-O-A-8 (35-40 cm)
Total PCB in Core TOA-8: 15,630 ng/g
% of Total PCB
0
2
4
6
8
10
12
14
16
PCB Congener
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

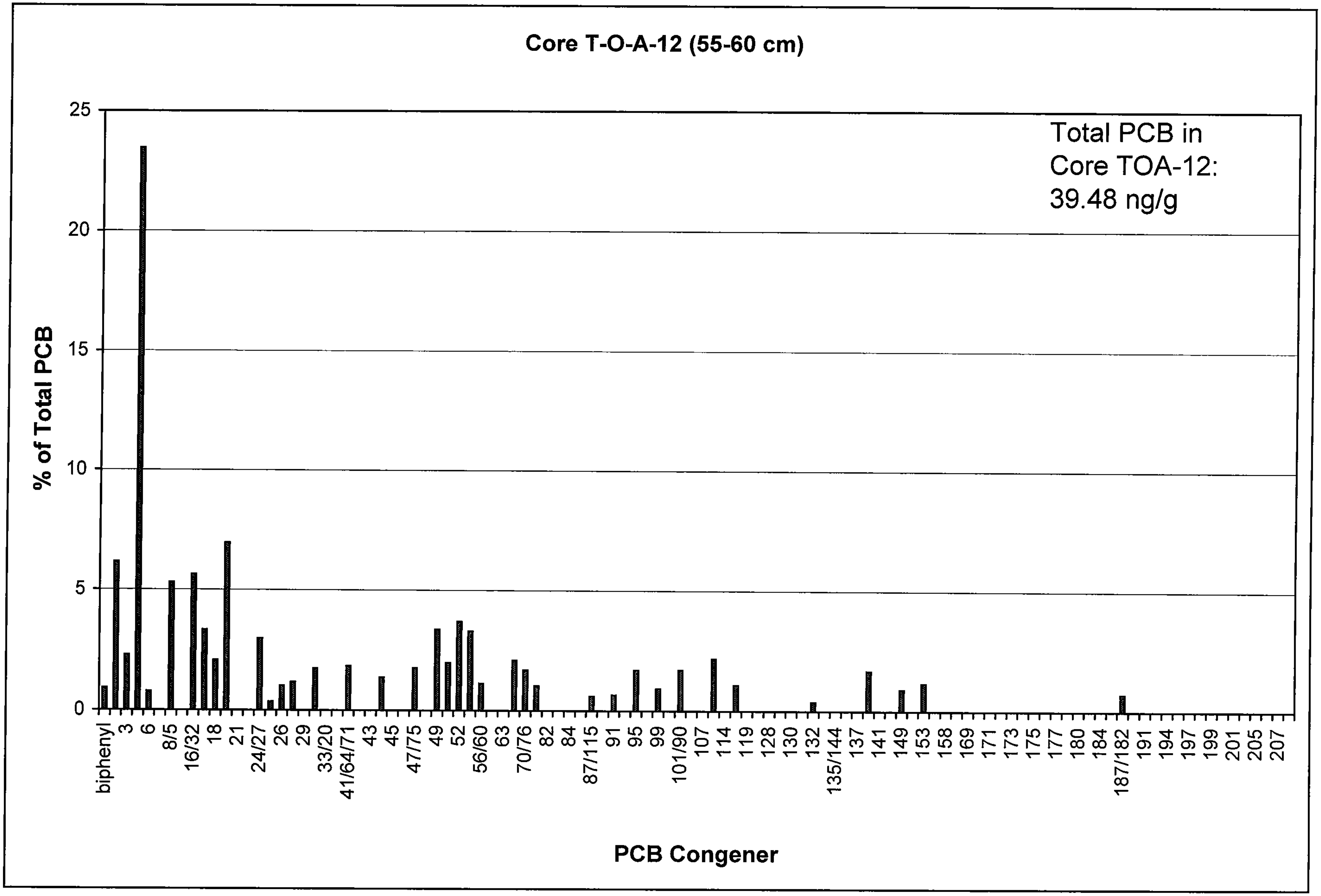


Core T-O-A-9 (40-45 cm)
Total PCB in
Core TOA-9:
1,804 ng/g
% of Total PCB
0
1
2
3
4
5
6
7
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

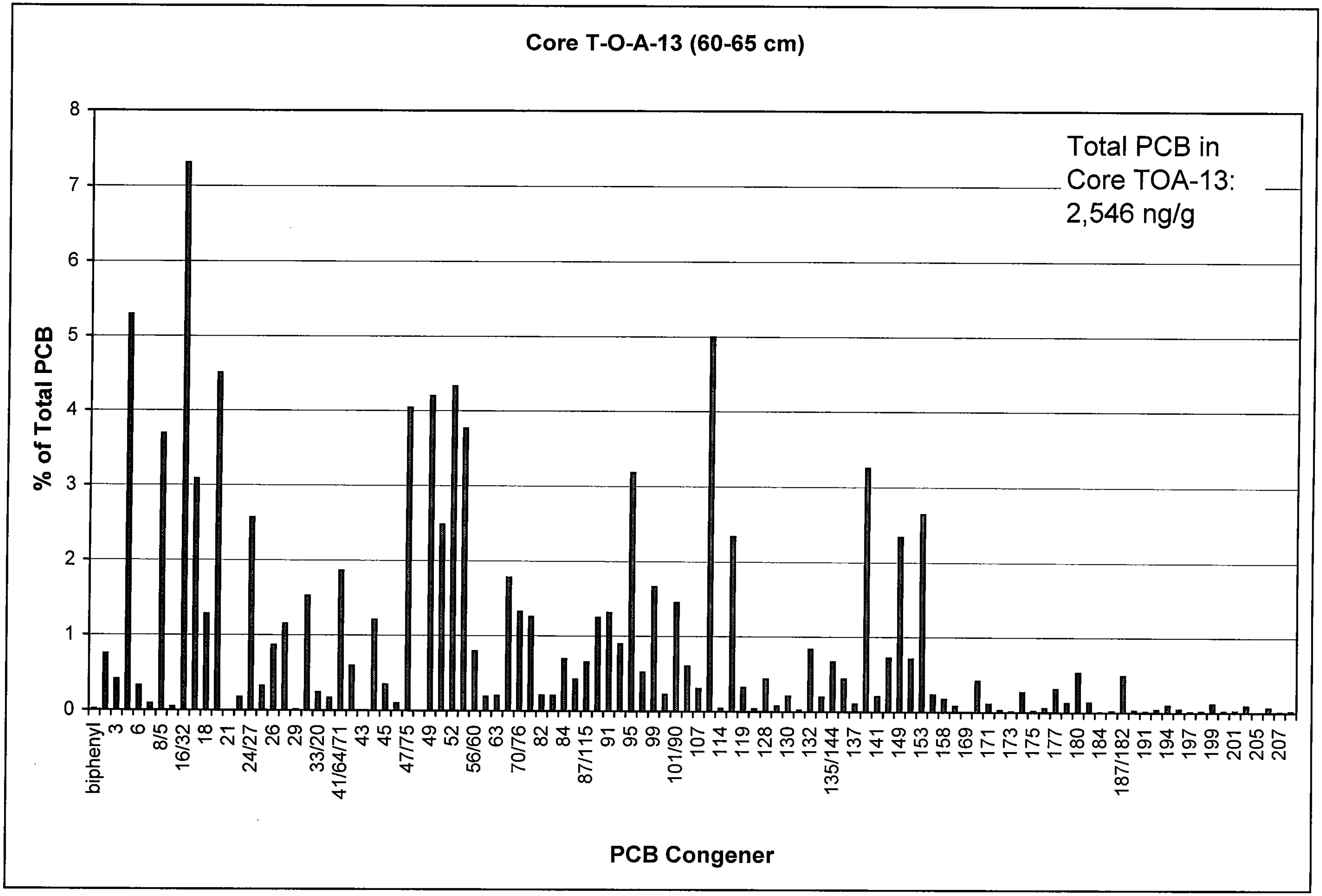


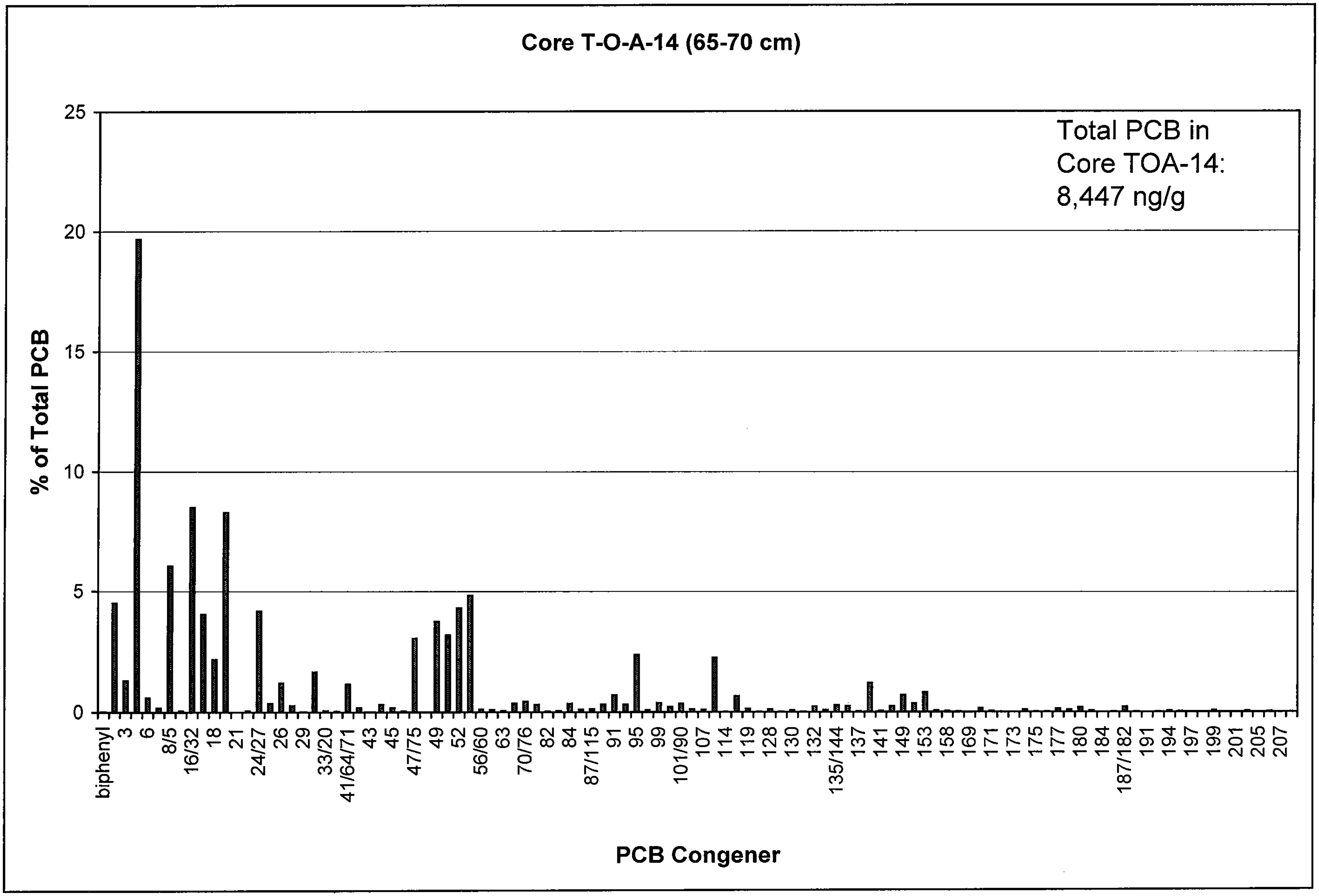
Core T-O-A-10 (45-50 cm)
Total PCB in Core TOA-10: 5,958 ng/g
% of Total PCB
0
2
4
6
8
10
12
14
PCB Congener
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207


Core T-O-A-11 (50-55 cm)
Total PCB in Core TOA-11: 16,389 ng/g
% of Total PCB
0
5
10
15
20
25
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

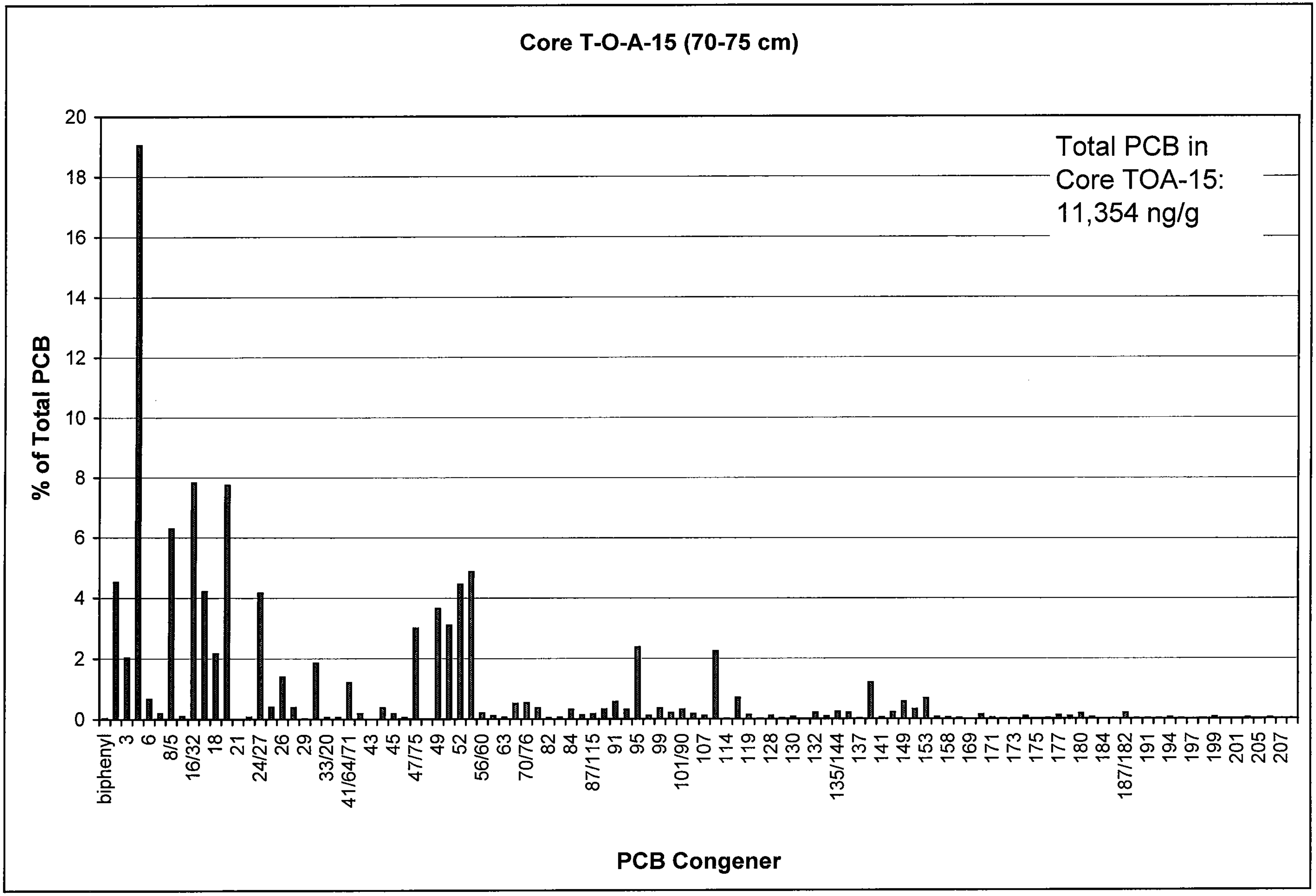


Core T-O-A-12 (55-60 cm)
Total PCB in
Core TOA-12:
39.48 ng/g
% of Total PCB
0
5
10
15
20
25
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

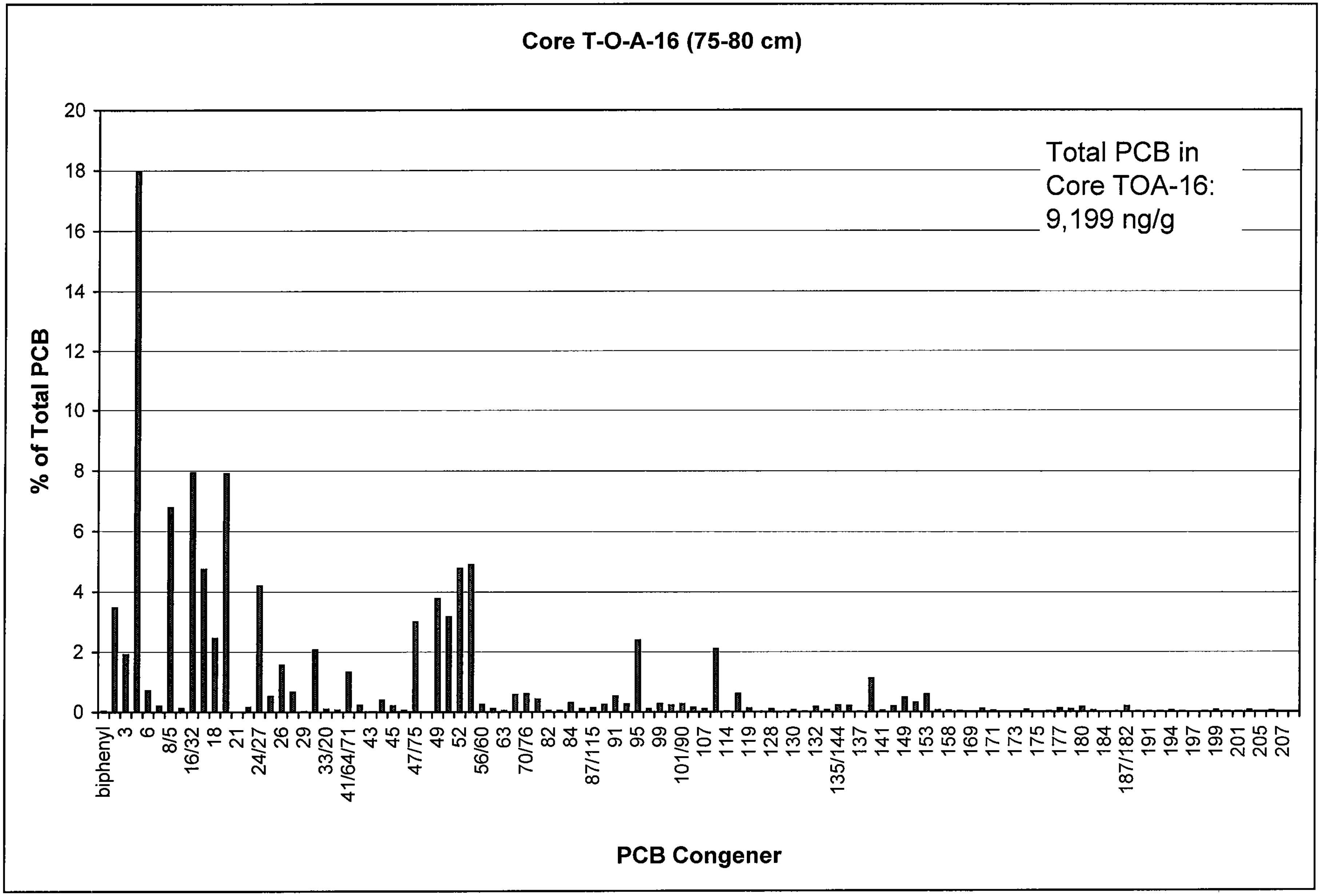

Core T-O-A-13 (60-65 cm)
Total PCB in Core TOA-13: 2,546 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207



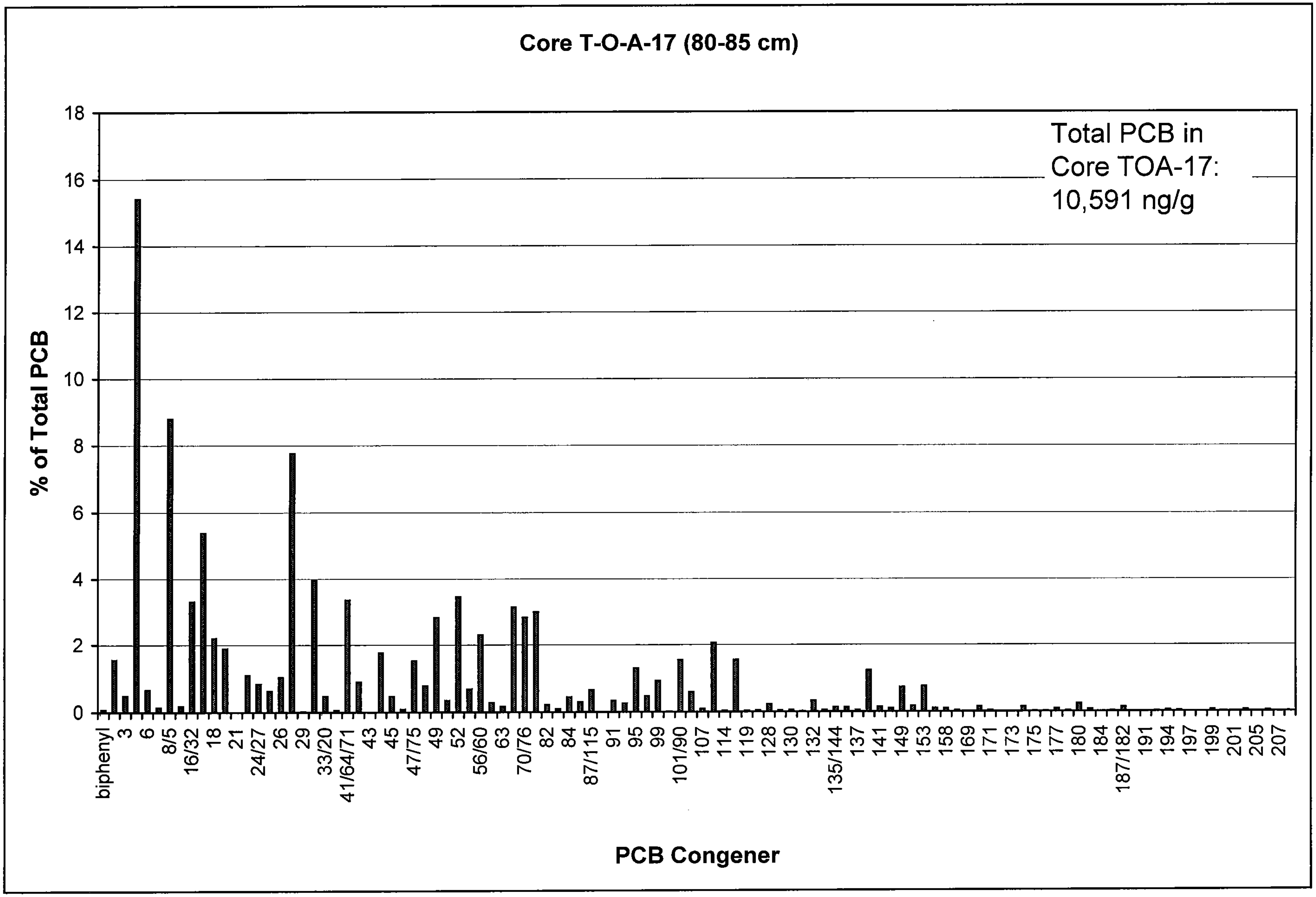
Core T-O-A-14 (65-70 cm)
Total PCB in
Core TOA-14:
8,447 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207



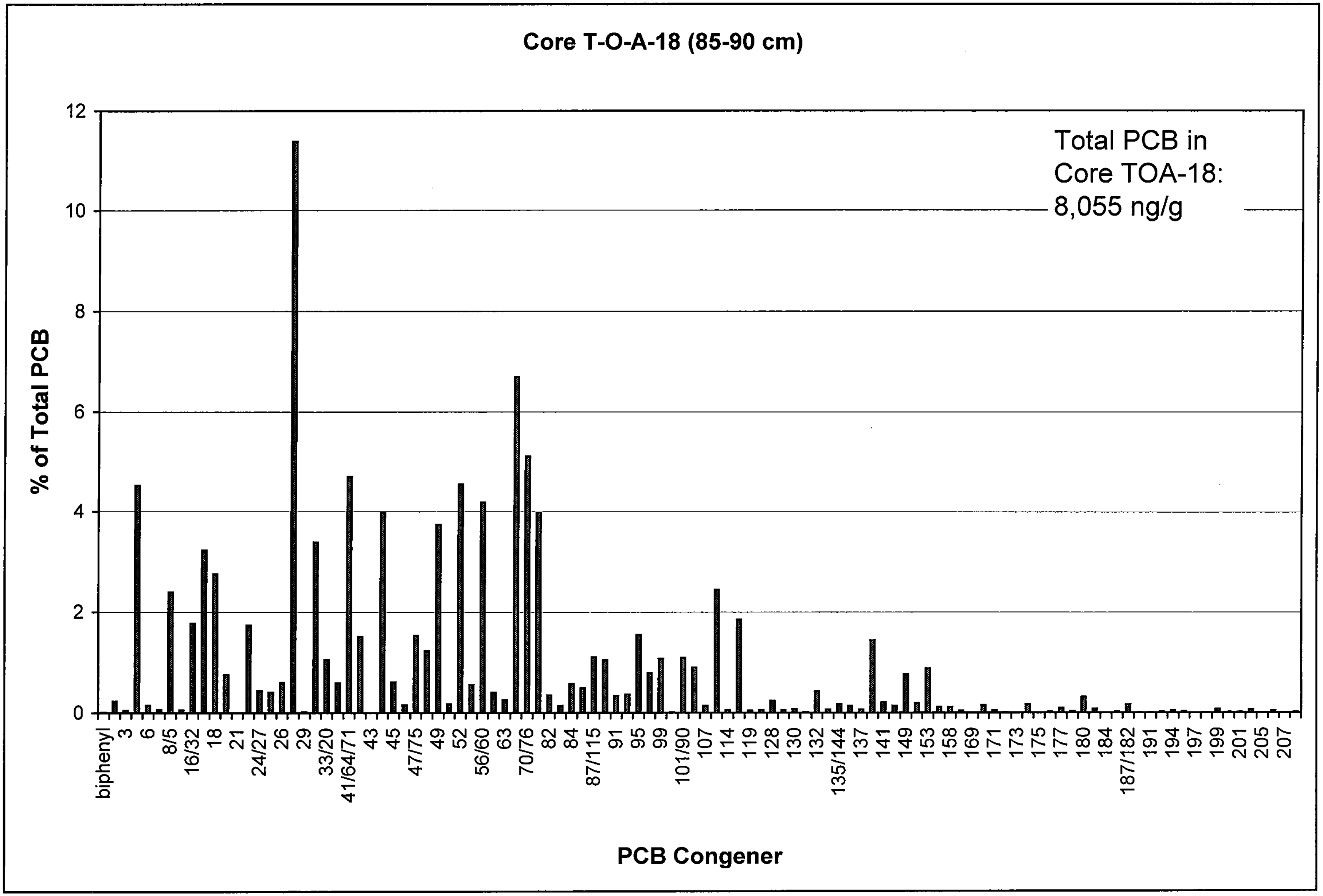
Core T-O-A-15 (70-75 cm)
Total PCB in Core TOA-15: 11,354 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
14
16
18
20
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207



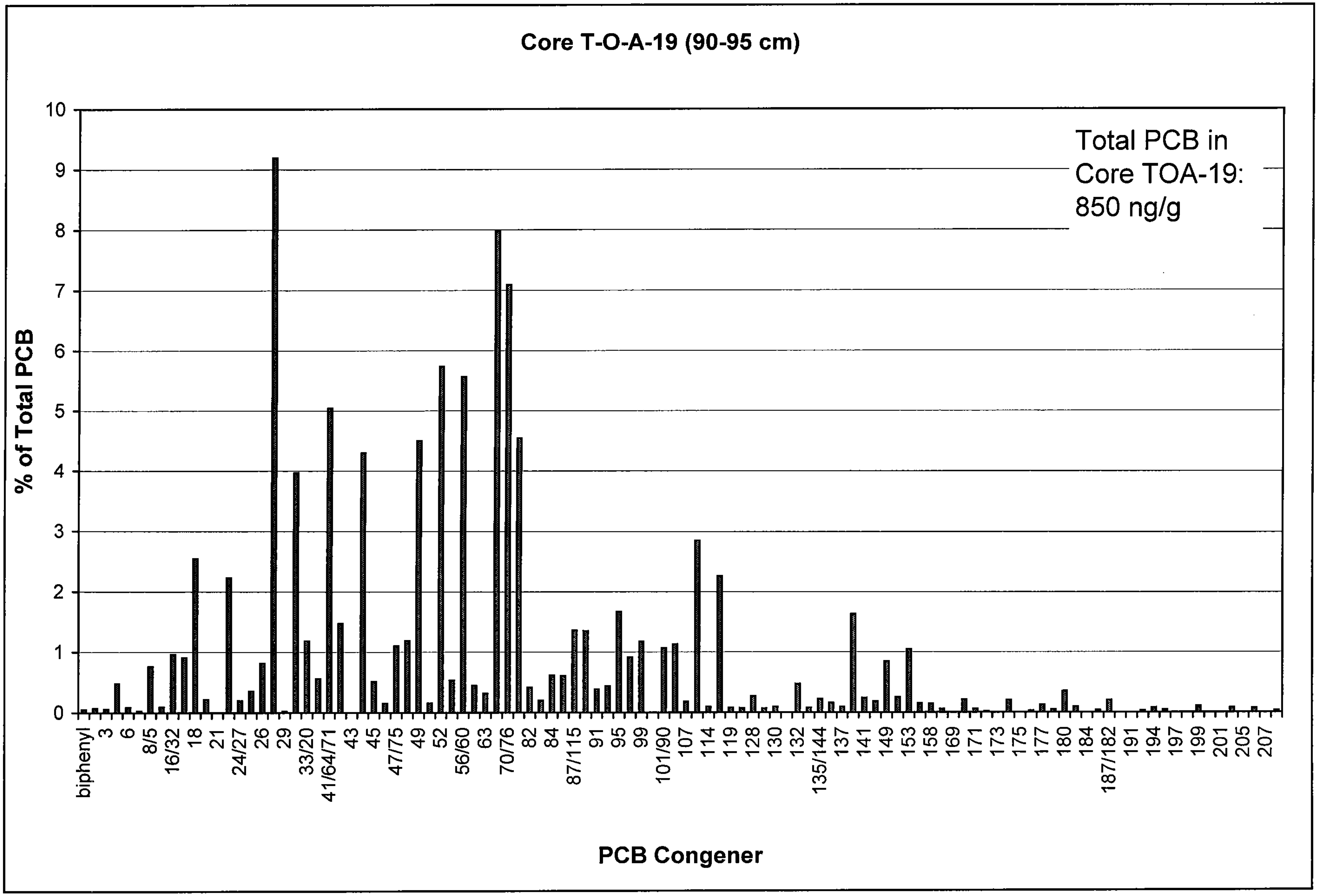
Core T-O-A-16 (75-80 cm)
Total PCB in Core TOA-16: 9,199 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
14
16
18
20
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207



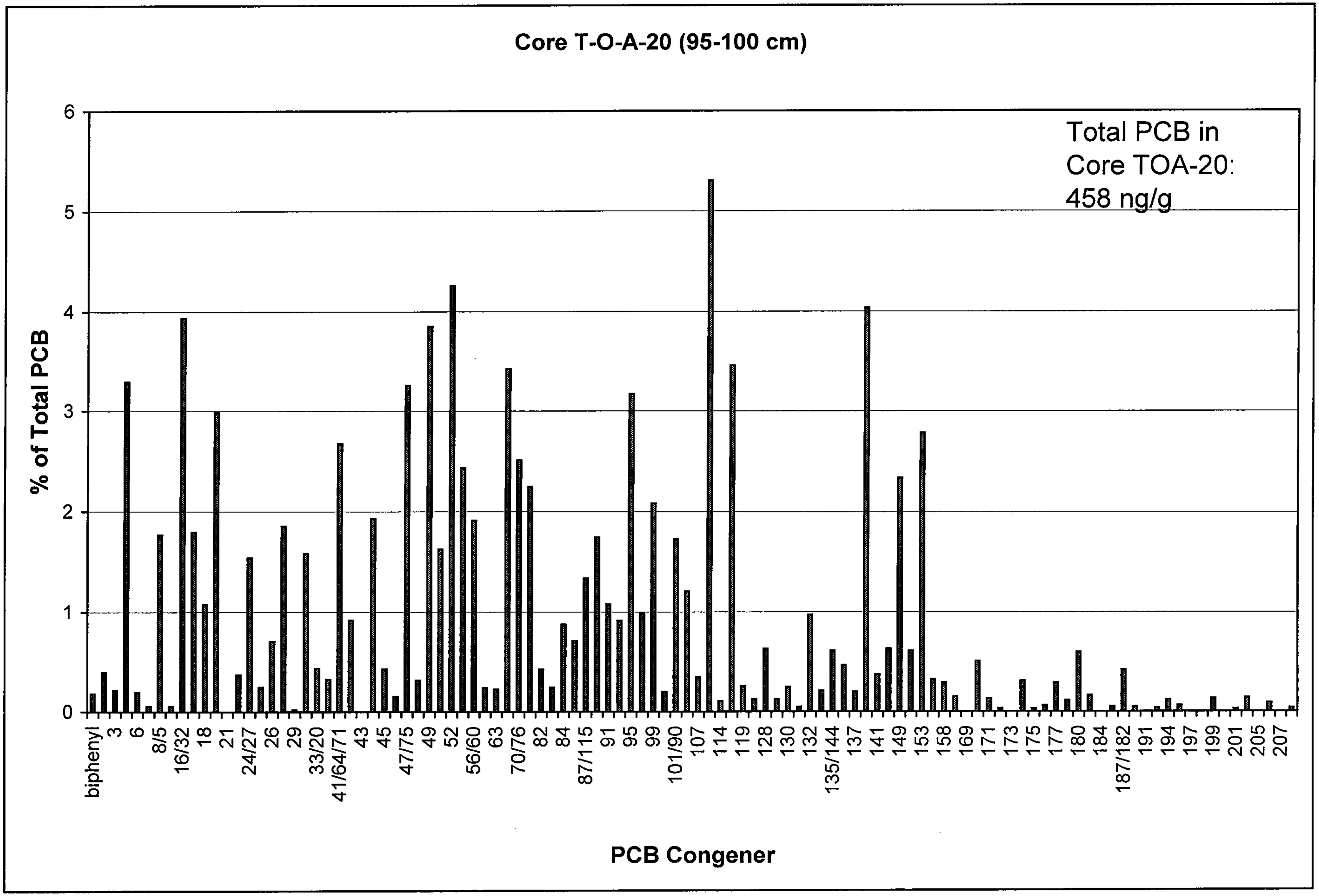
Core T-O-A-17 (80-85 cm)
Total PCB in Core TOA-17: 10,591 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
14
16
18
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

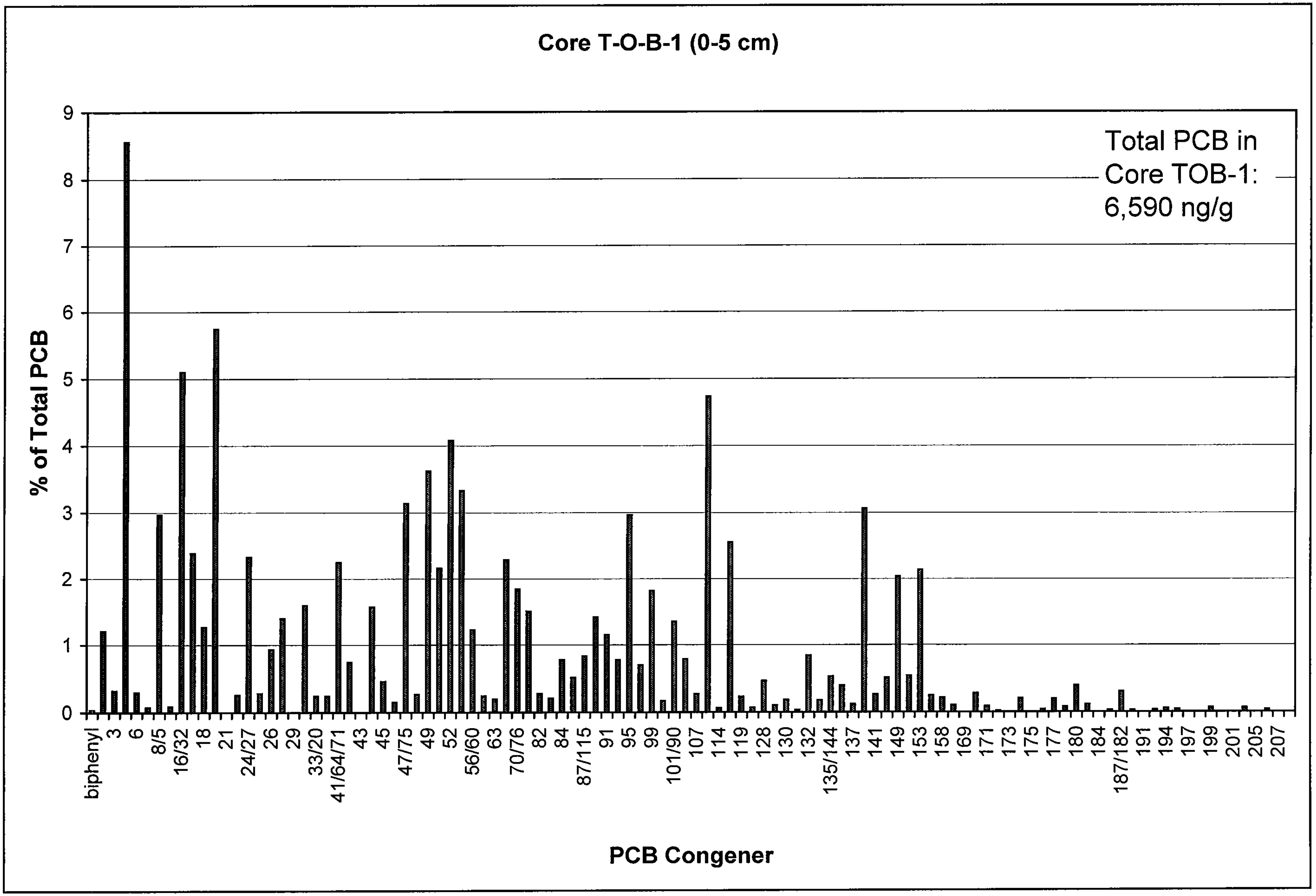


Core T-O-A-18 (85-90 cm)
Total PCB in
Core TOA-18:
8,055 ng/g
% of Total PCB
0
2
4
6
8
10
12
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

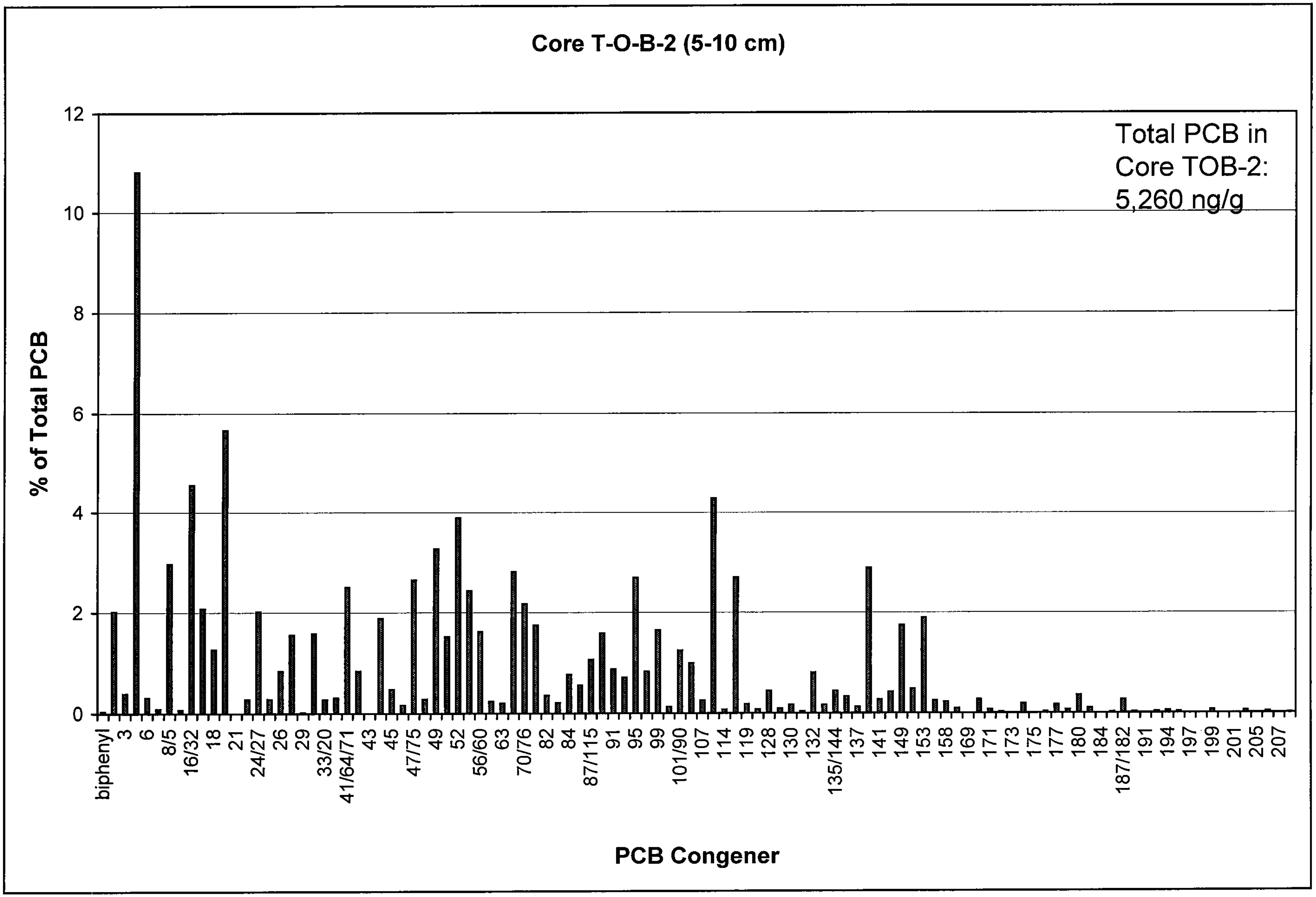


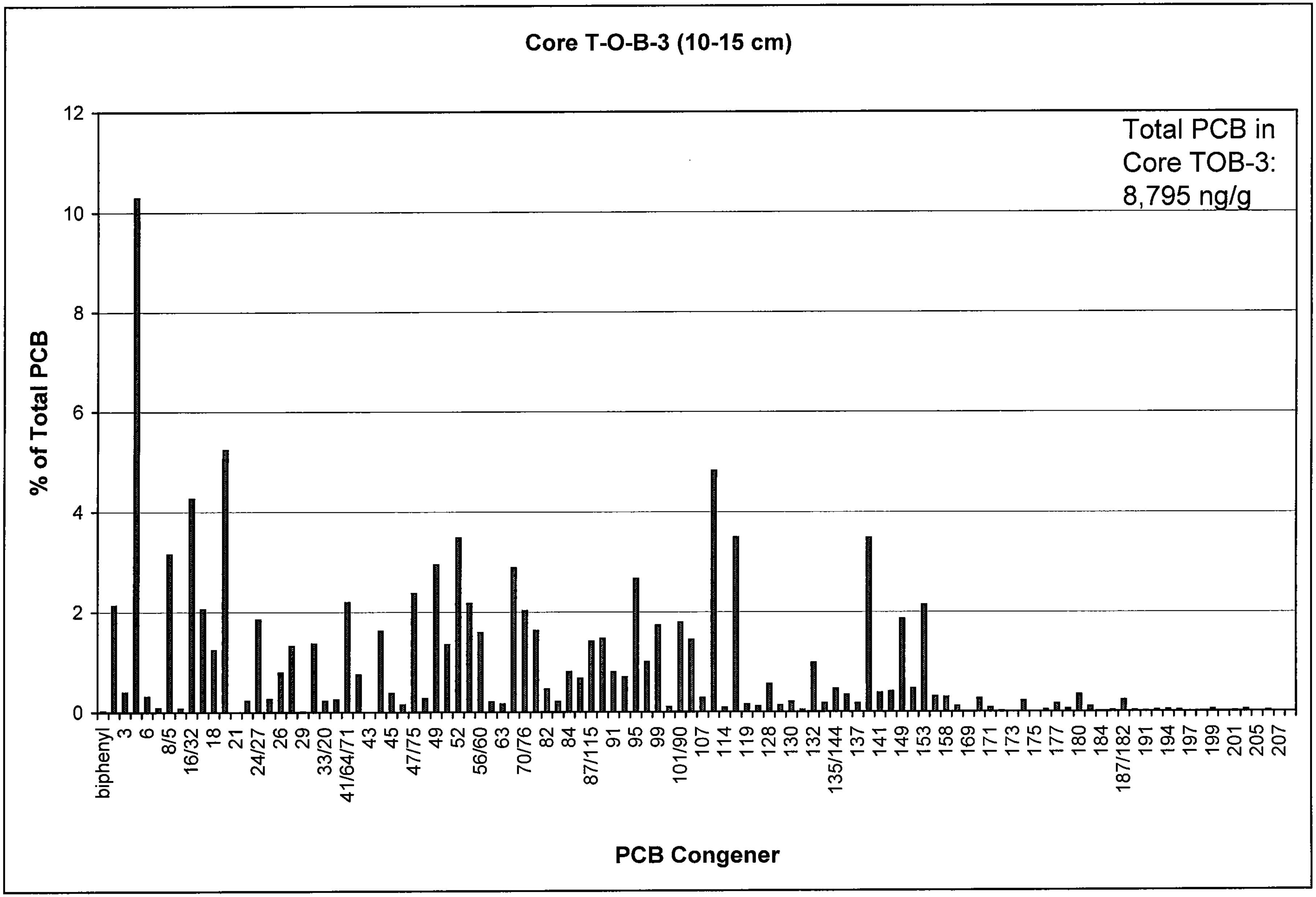
Core T-O-A-19 (90-95 cm)
Total PCB in Core TOA-19: 850 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
10
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

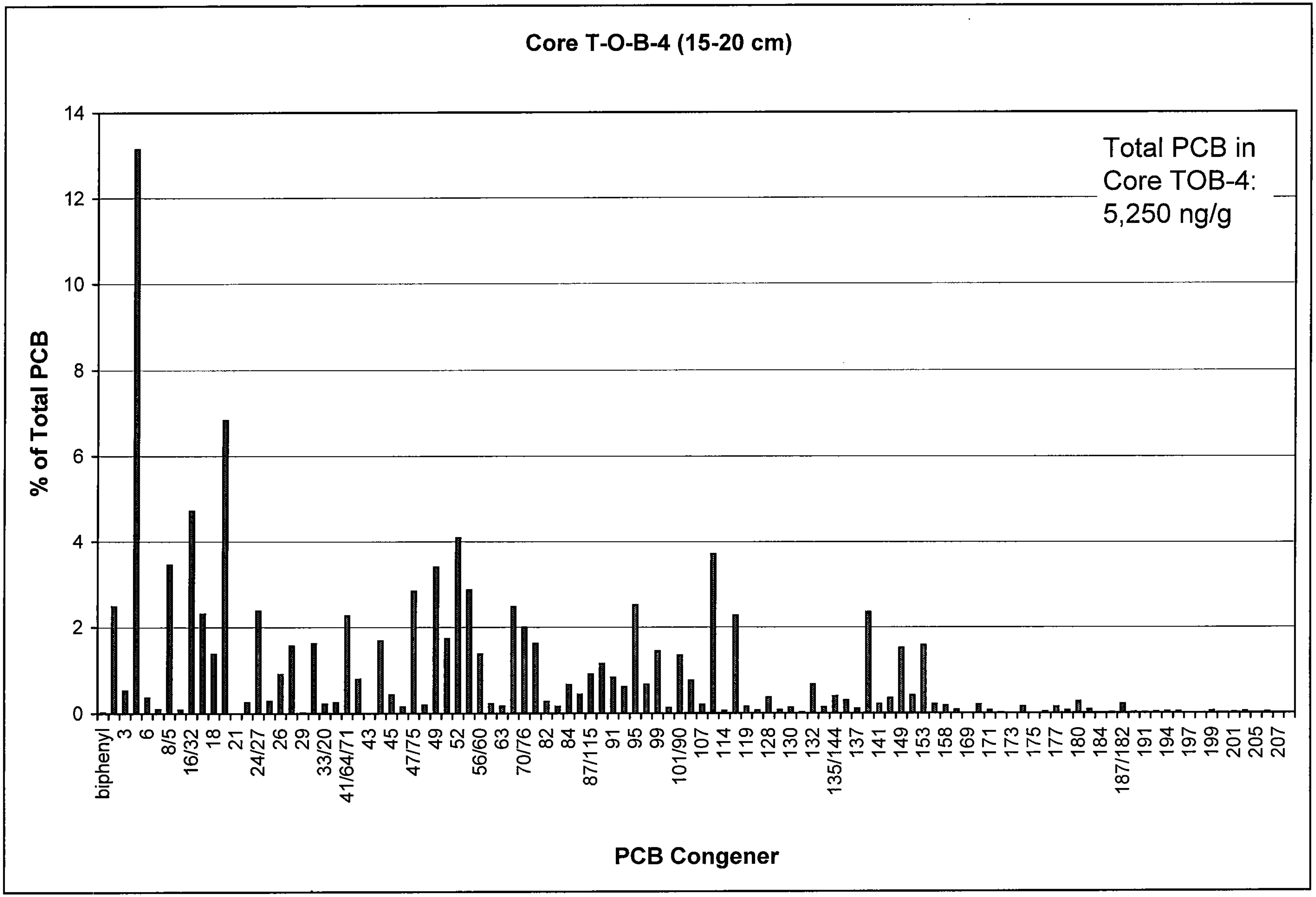

Core T-O-A-20 (95-100 cm)
Total PCB in Core TOA-20: 458 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

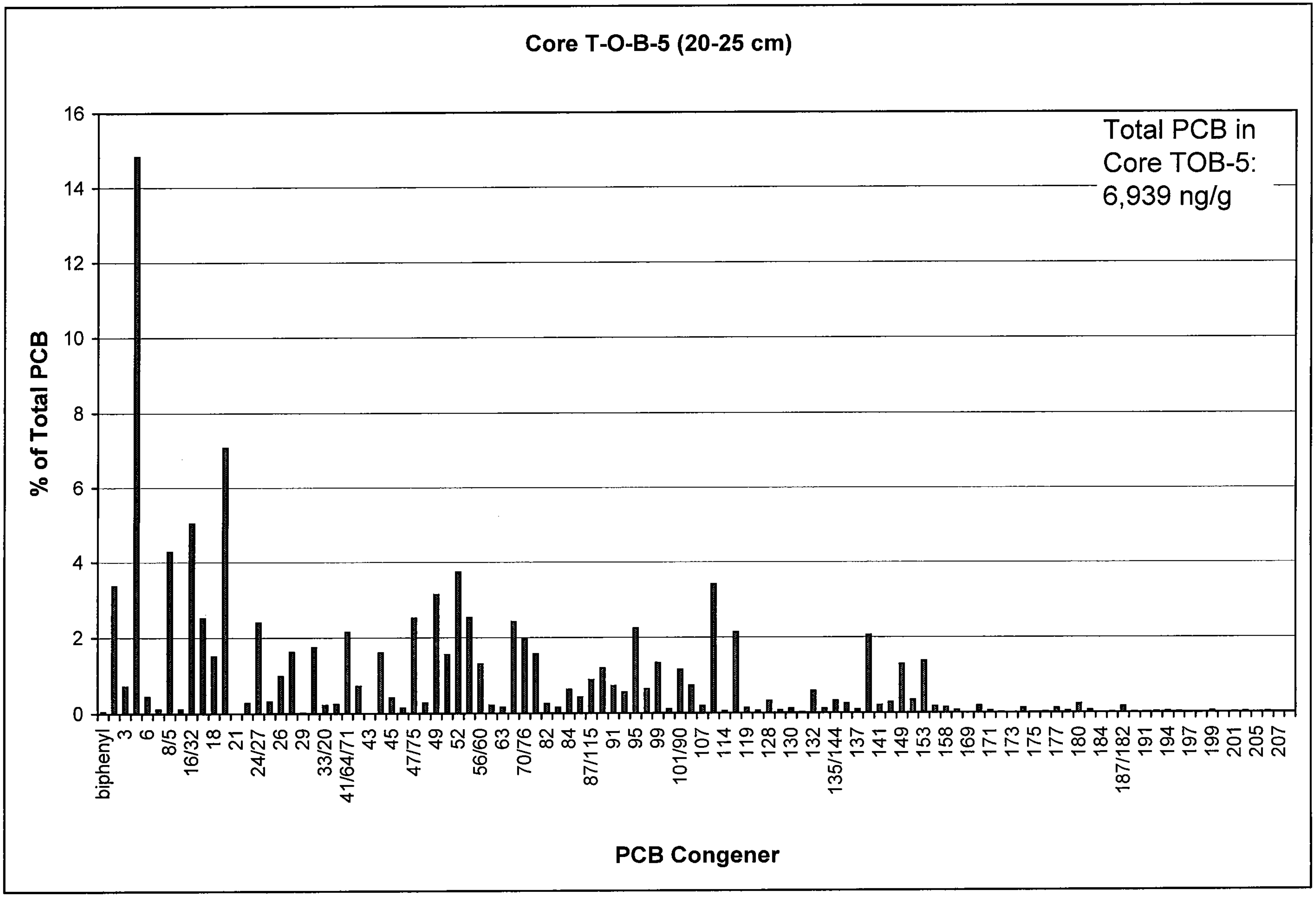


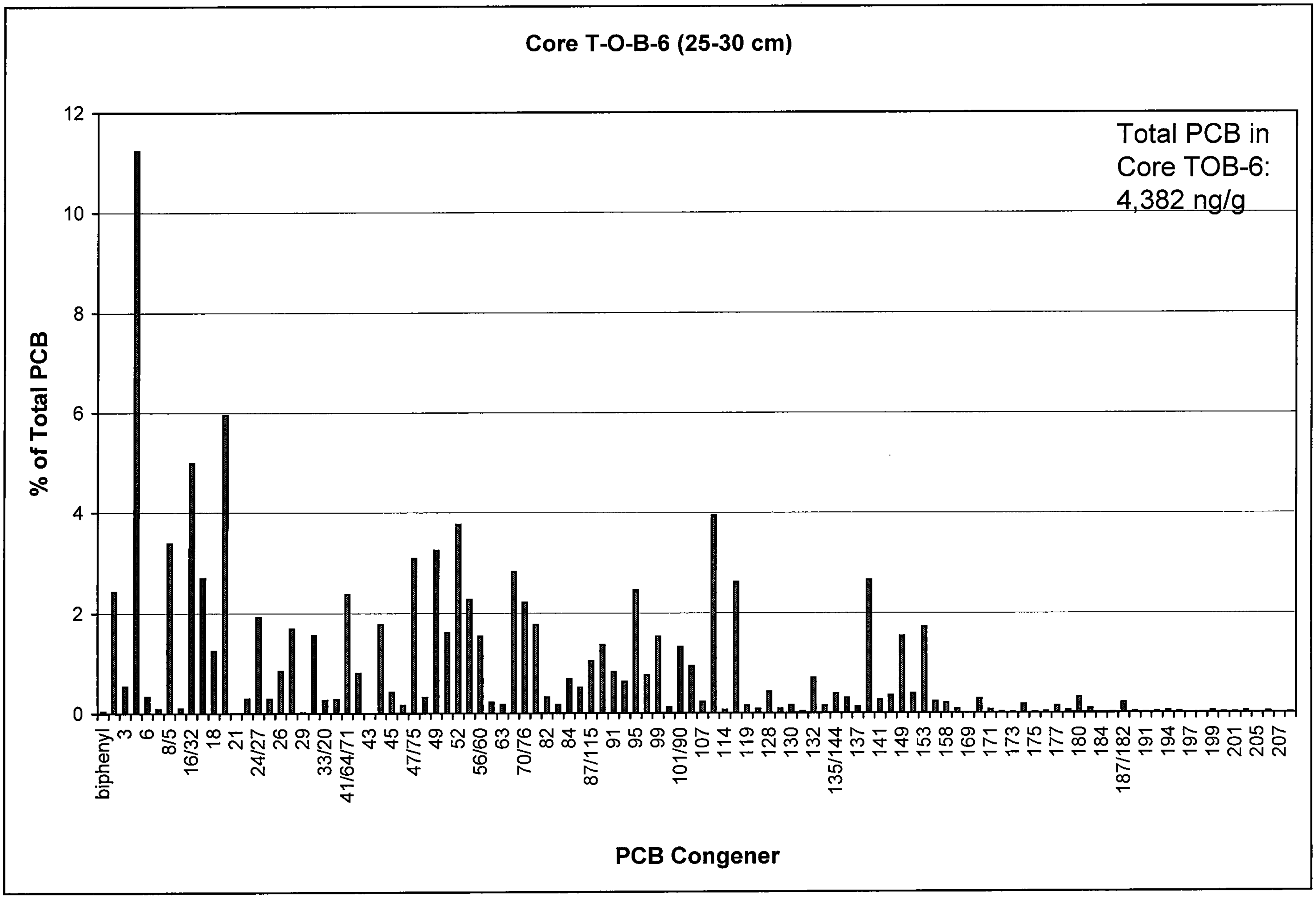
Core T-O-B-1 (0-5 cm)
Total PCB in Core TOB-1: 6,590 ng/g
% of Total PCB
0
1
2
3
4
5
6
7
8
9
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener


Core T-O-B-2 (5-10 cm)
Total PCB in Core TOB-2: 5,260 ng/g
% of Total PCB
0
2
4
6
8
10
12
PCB Congener
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

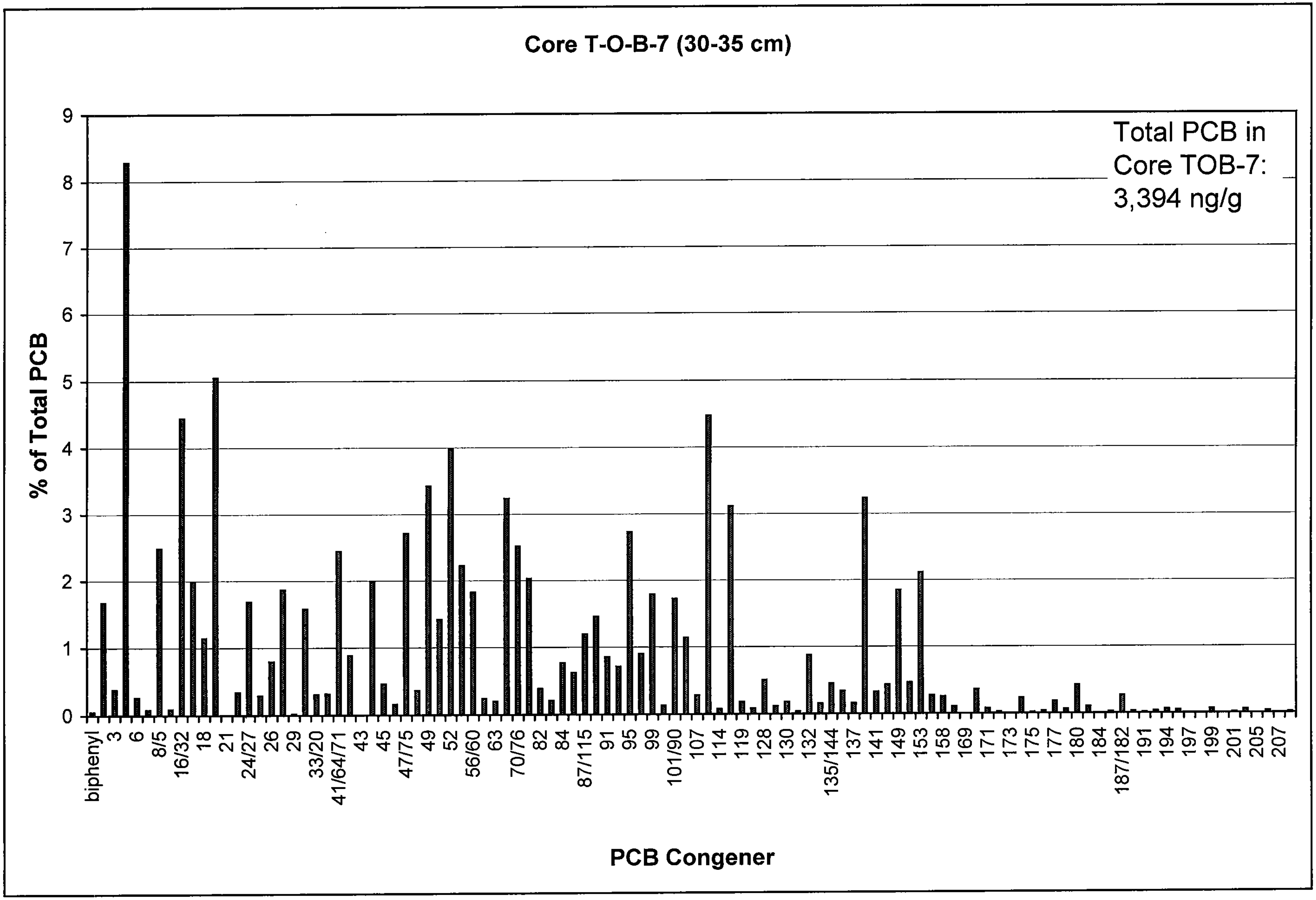

Core T-O-B-3 (10-15 cm)
Total PCB in Core TOB-3: 8,795 ng/g
% of Total PCB
0
2
4
6
8
10
12
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener


Core T-O-B-4 (15-20 cm)
Total PCB in Core TOB-4: 5,250 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
14
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

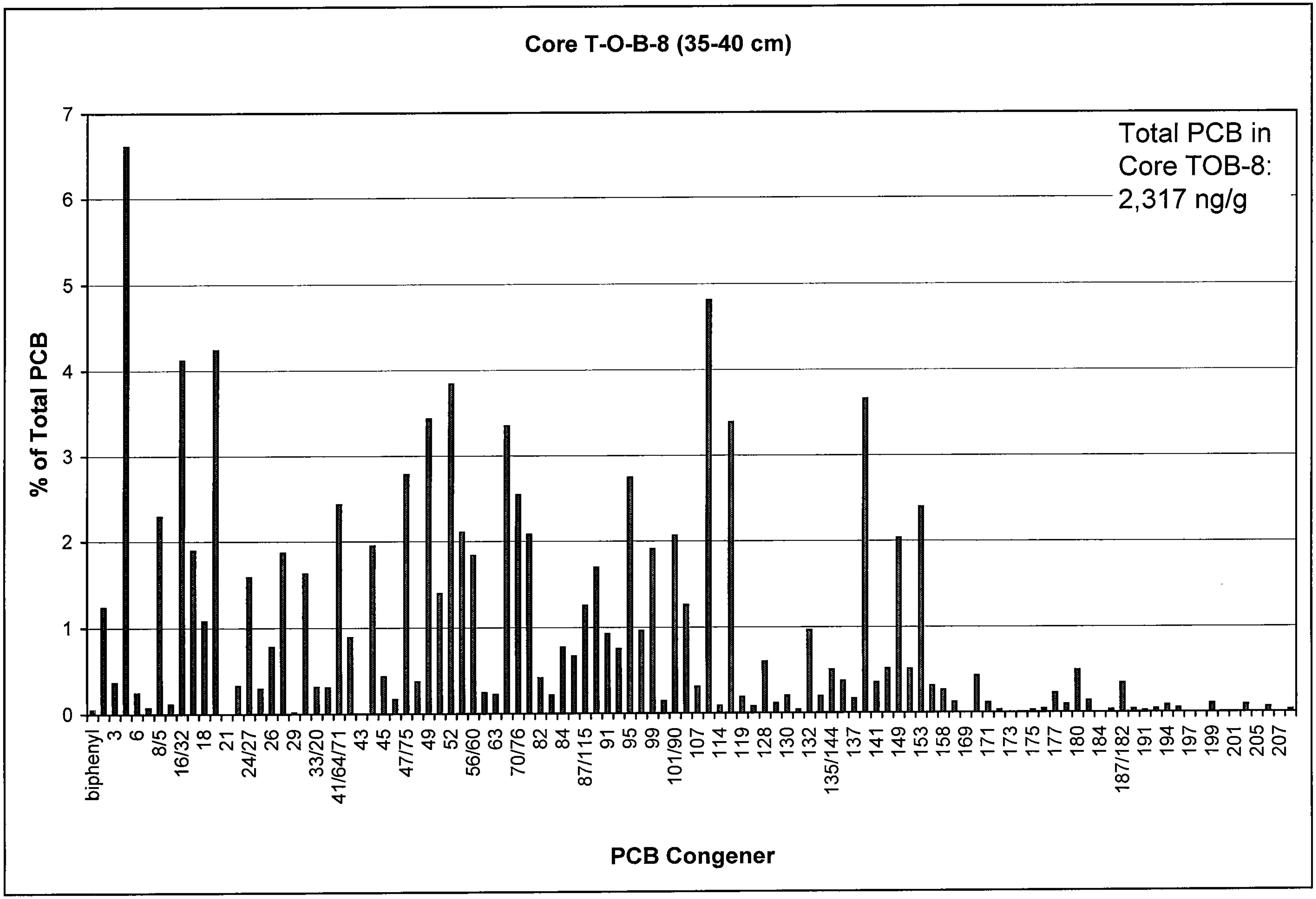

Core T-O-B-5 (20-25 cm)
Total PCB in Core TOB-5: 6,939 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
14
16
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

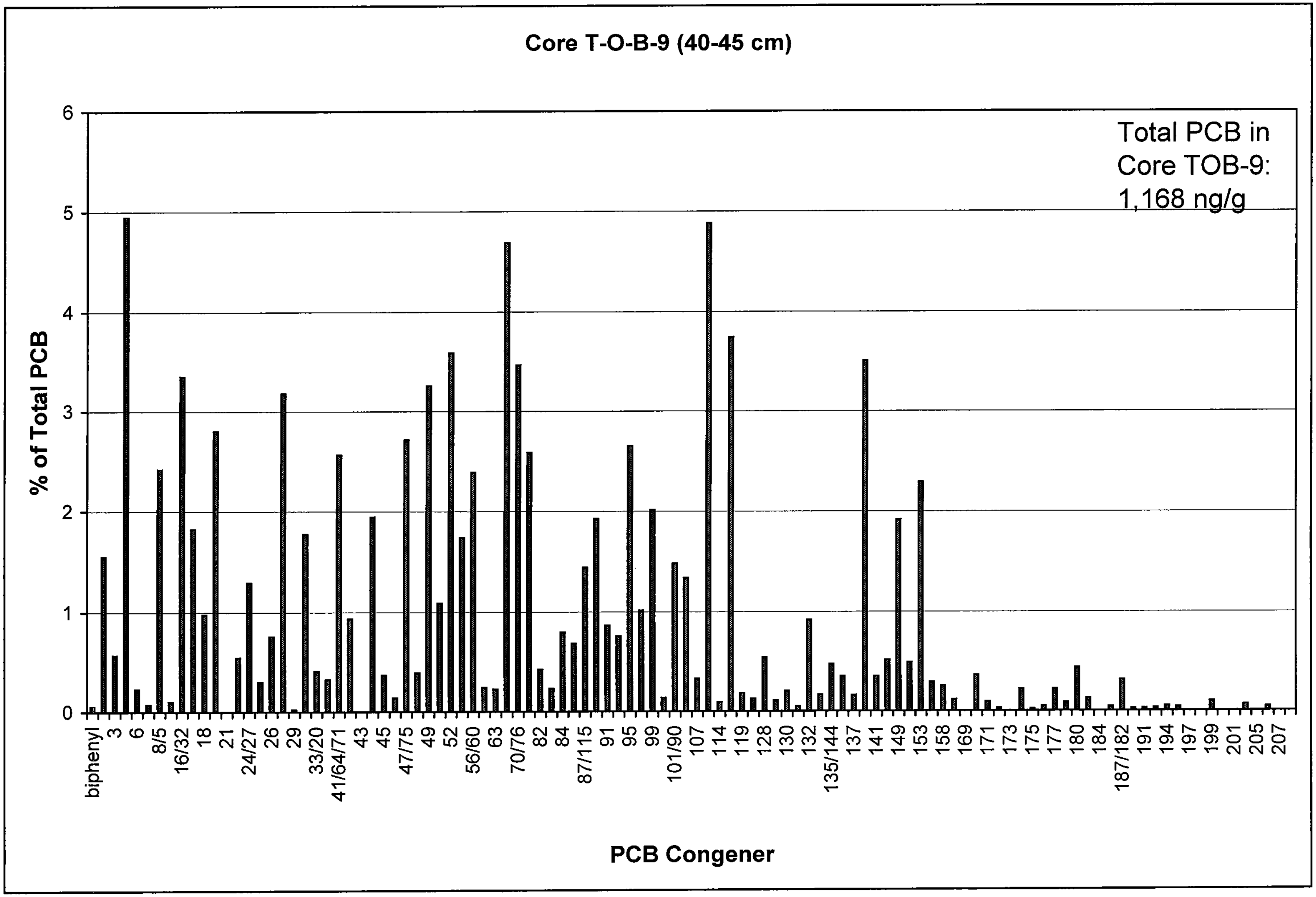


Core T-O-B-6 (25-30 cm)
Total PCB in
Core TOB-6:
4,382 ng/g
% of Total PCB
0
2
4
6
8
10
12
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

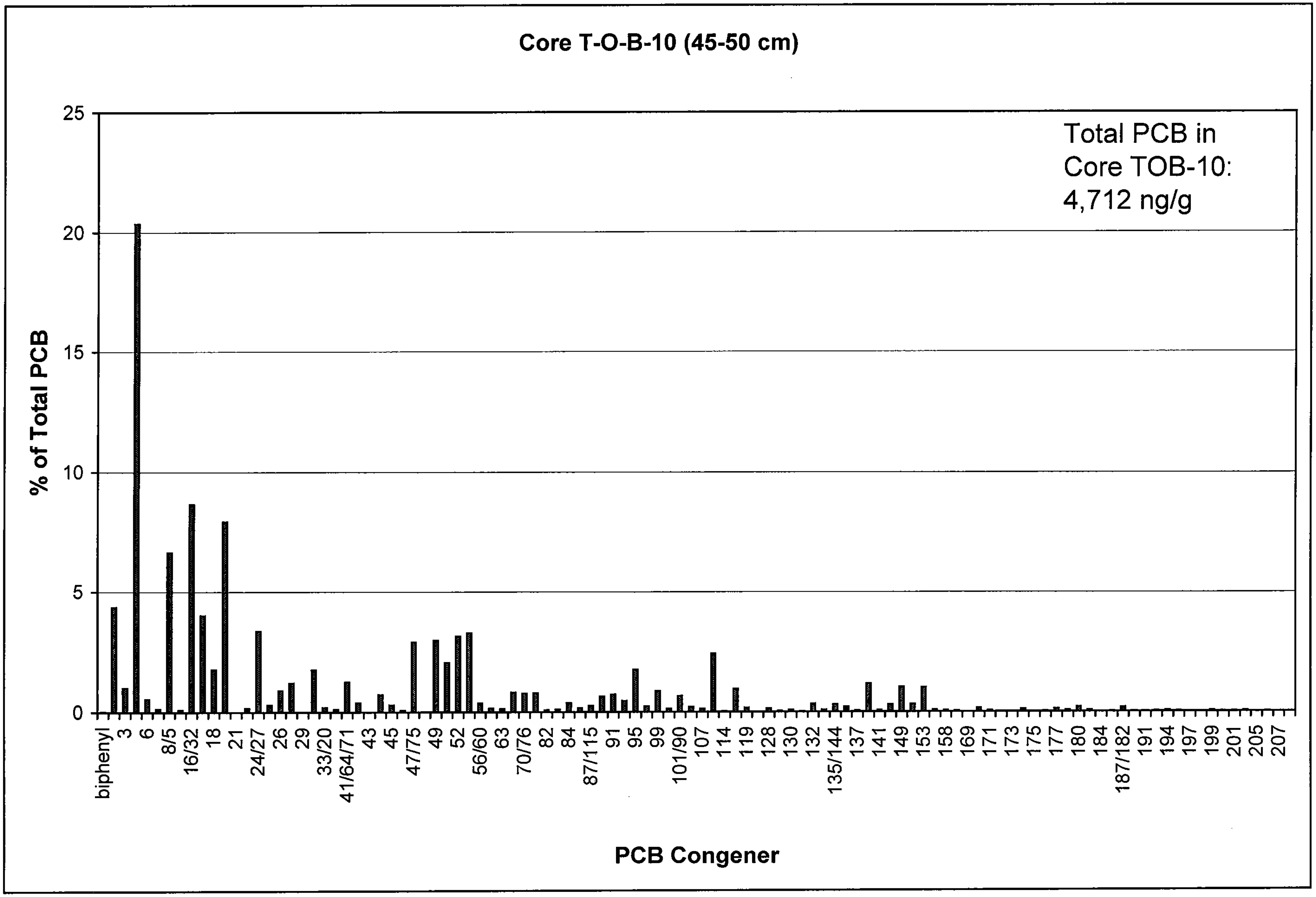


Core T-O-B-7 (30-35 cm)
Total PCB in Core TOB-7: 3,394 ng/g
% of Total PCB
0
1
2
3
4
5
6
7
8
9
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

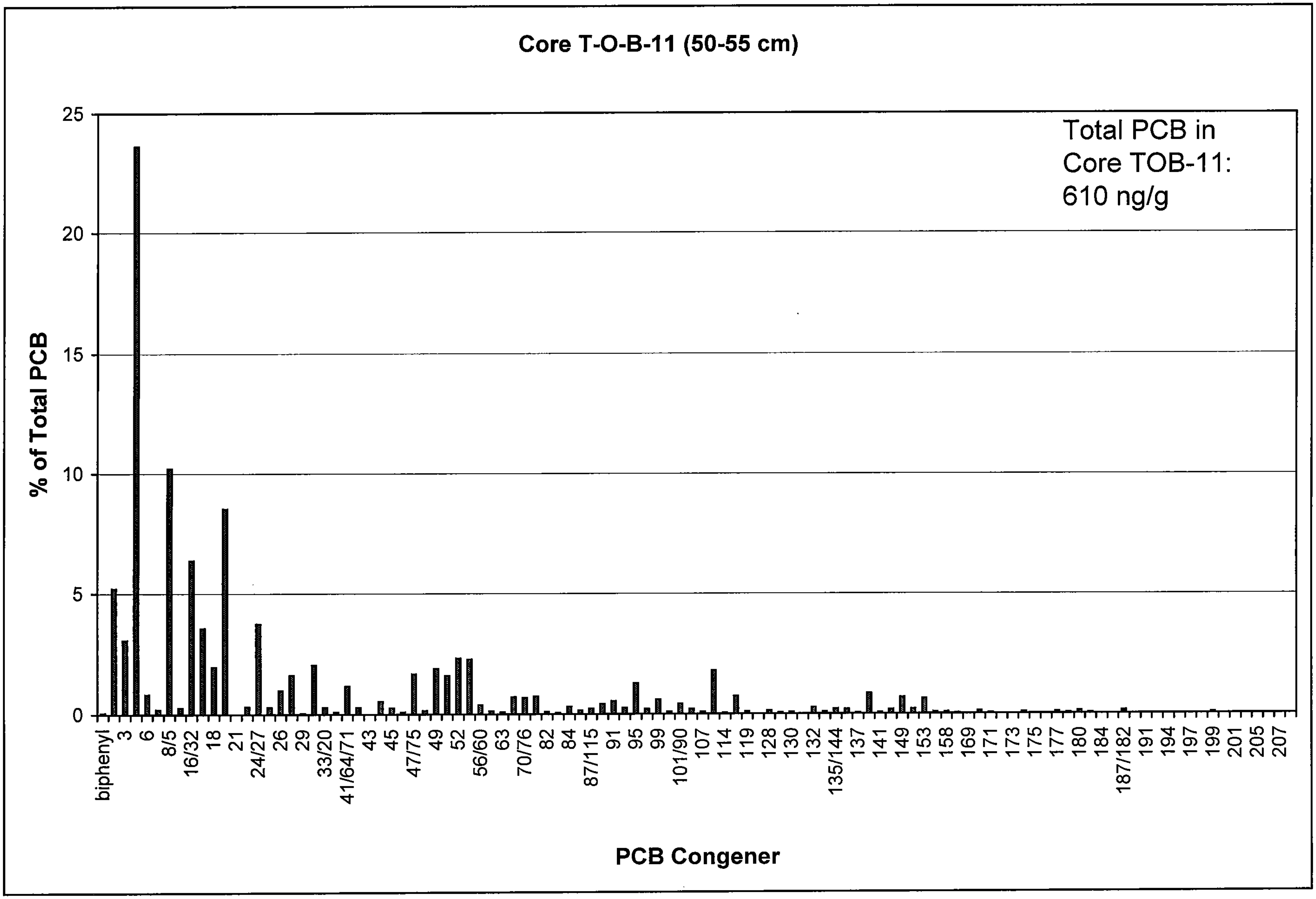

Core T-O-B-8 (35-40 cm)
Total PCB in Core TOB-8: 2,317 ng/g
% of Total PCB
0
1
2
3
4
5
6
7
PCB Congener
biphenyl 3 6 8/5 16/32 18 21 24/27 26 29 33/20 41/64/71 43 45 47/75 49 52 56/60 63 70/76 82 84 87/115 91 95 99 101/90 107 114 119 128 130 132 135/144 137 141 149 153 158 169 171 173 175 177 180 184 187/182 191 194 197 199 201 205 207



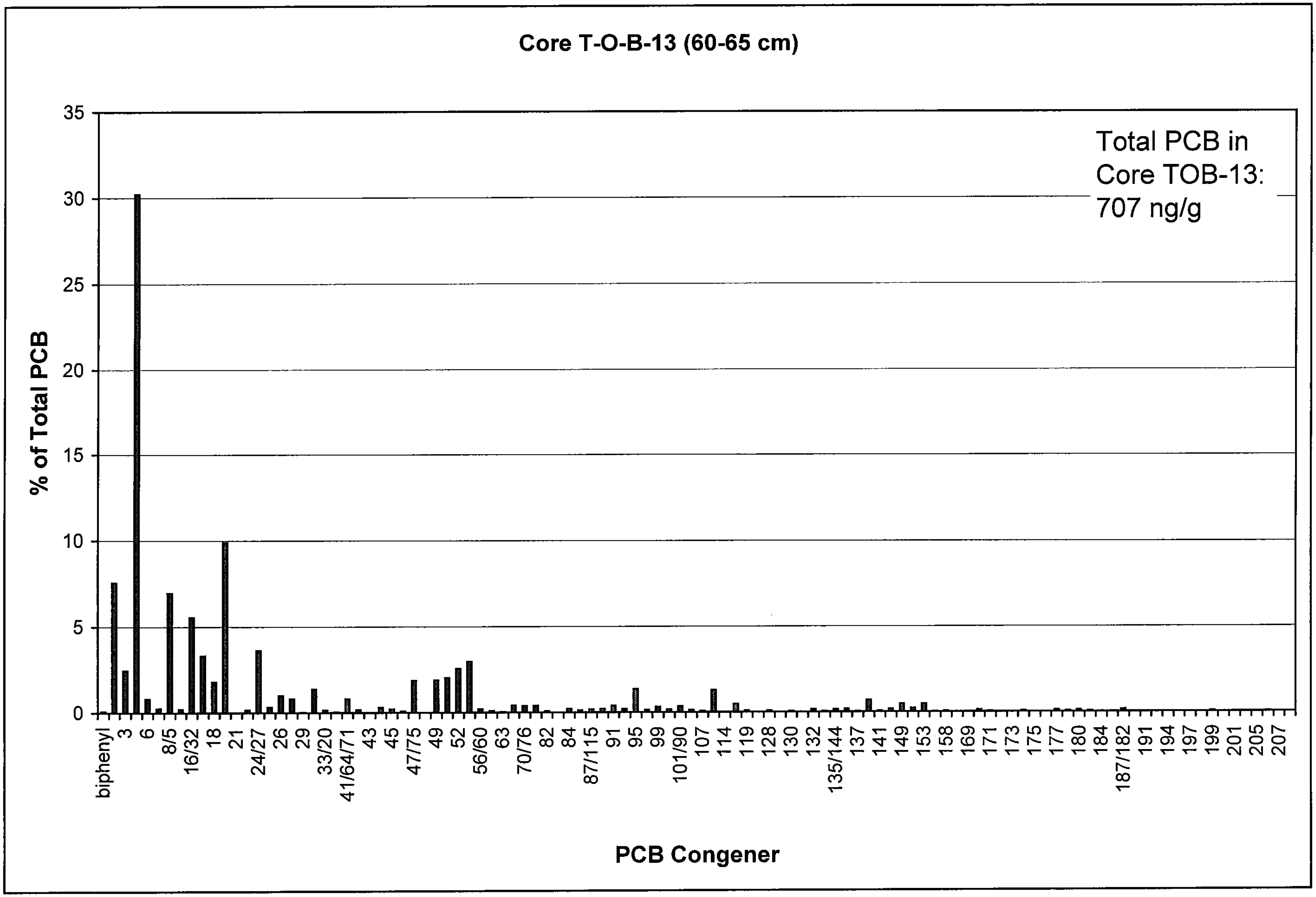
Core T-O-B-9 (40-45 cm)
Total PCB in Core TOB-9: 1,168 ng/g
% of Total PCB
0
1
2
3
4
5
6
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

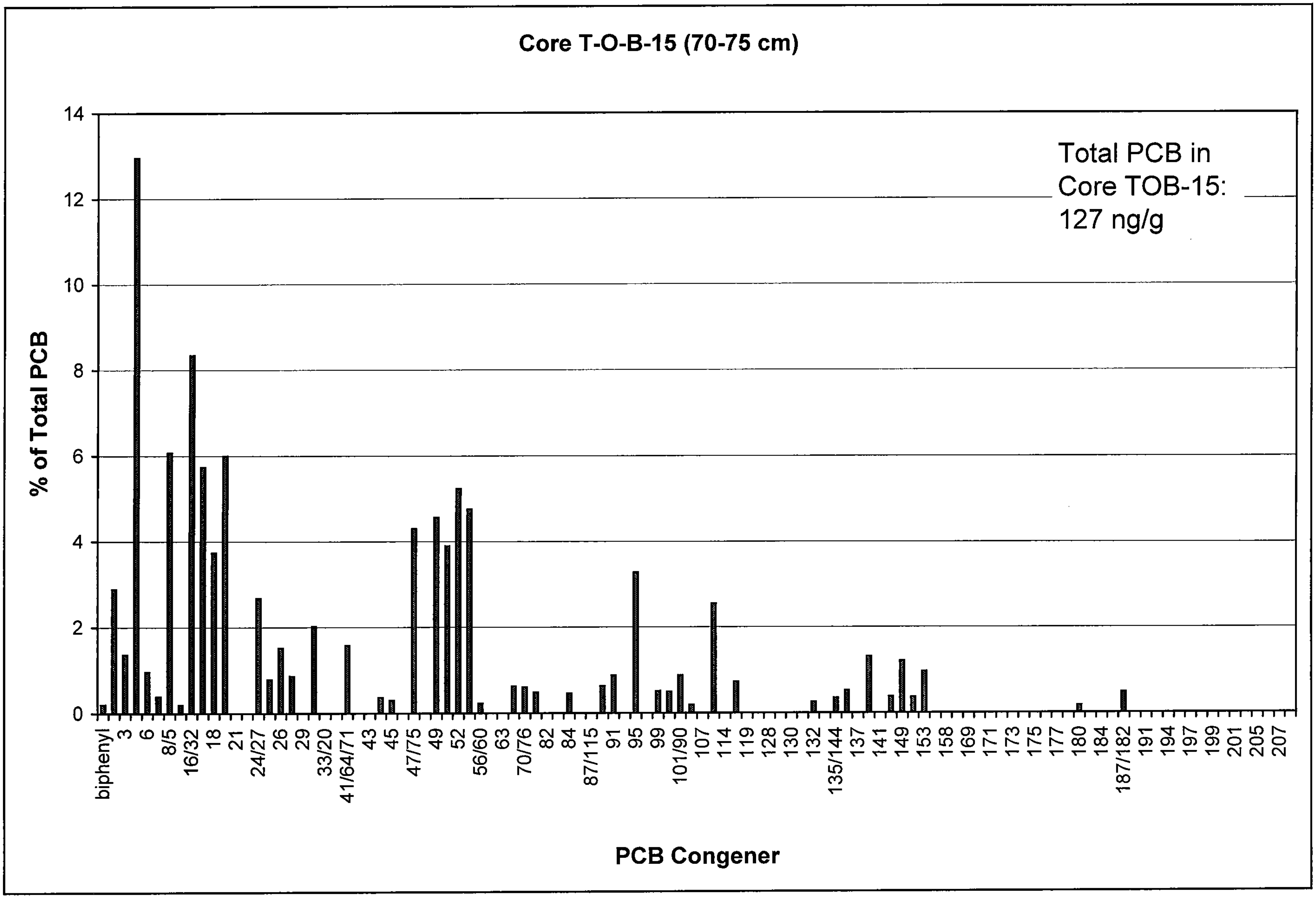


Core T-O-B-10 (45-50 cm)
Total PCB in Core TOB-10: 4,712 ng/g
% of Total PCB
0
5
10
15
20
25
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

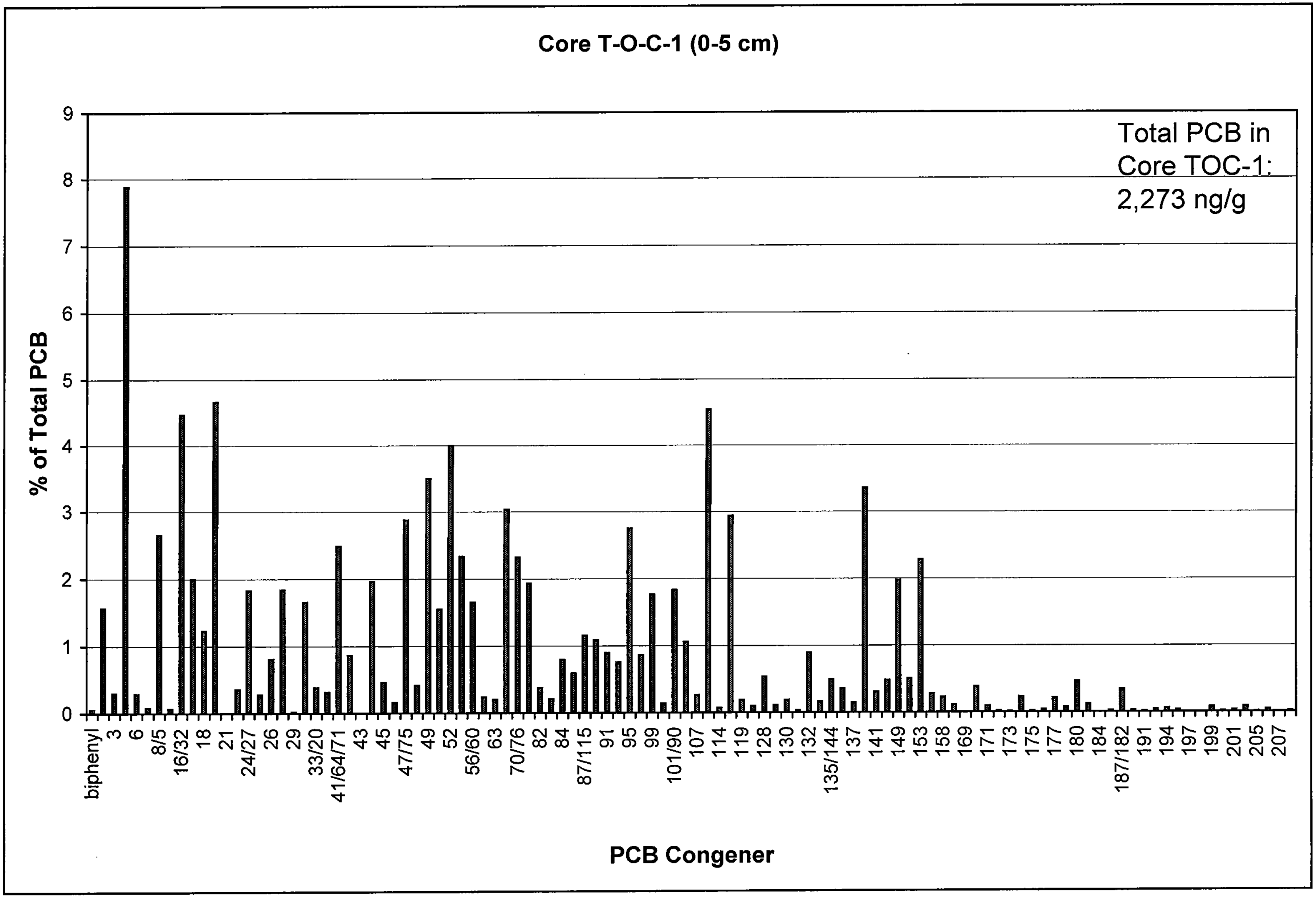


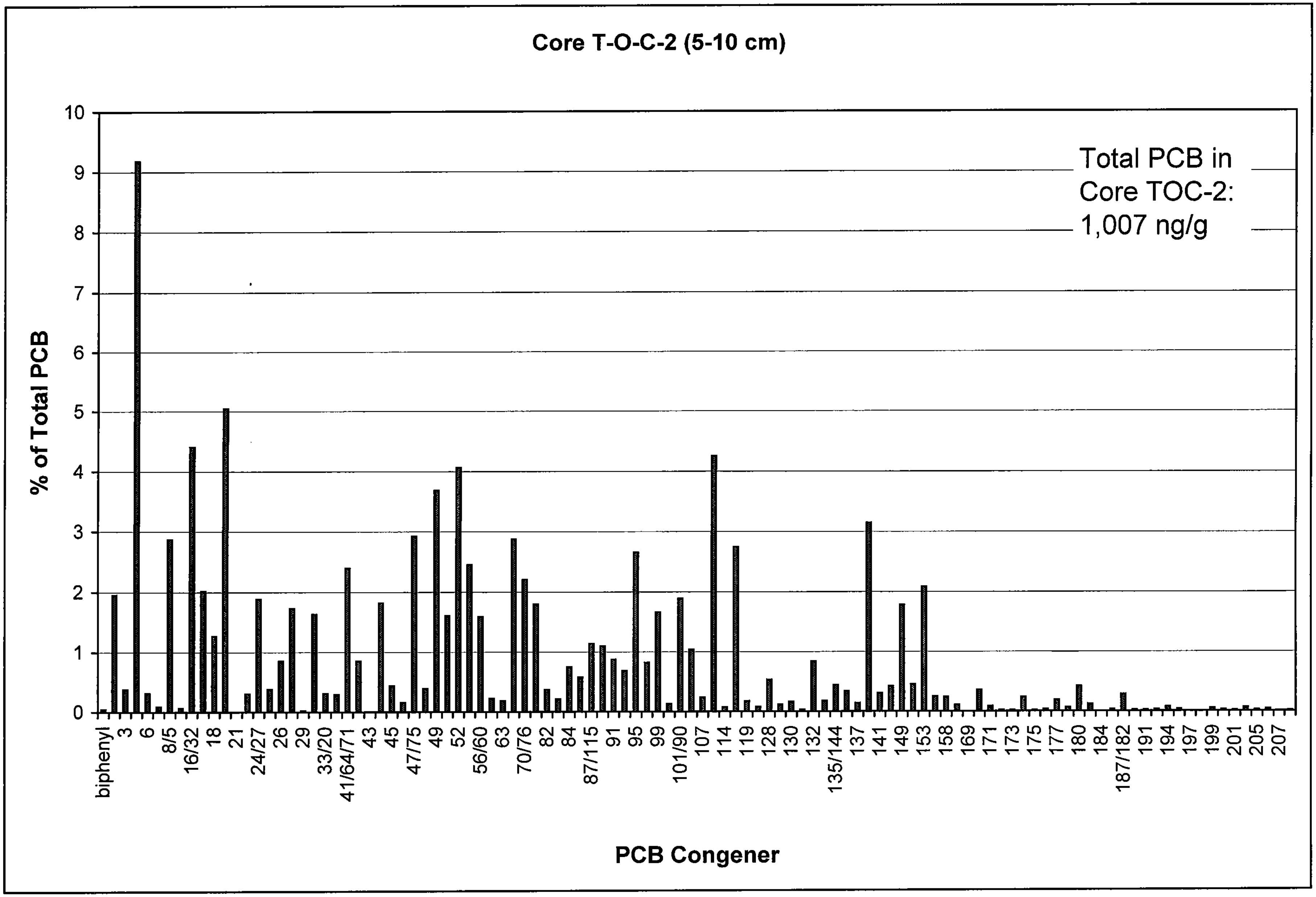
Core T-O-B-11 (50-55 cm)
Total PCB in
Core TOB-11:
610 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

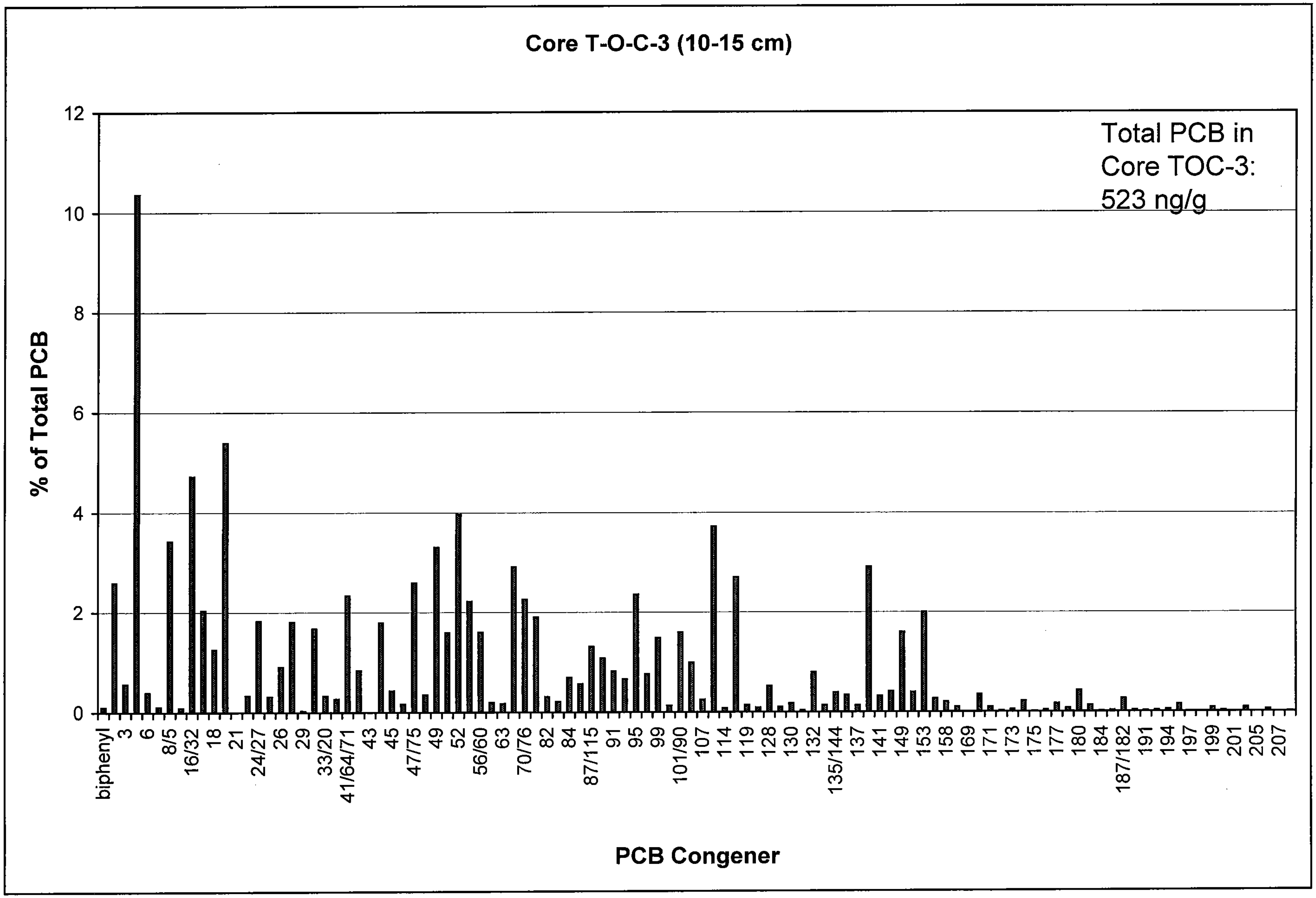

Core T-O-B-13 (60-65 cm)
Total PCB in Core TOB-13: 707 ng/g
% of Total PCB
0
5
10
15
20
25
30
35
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener



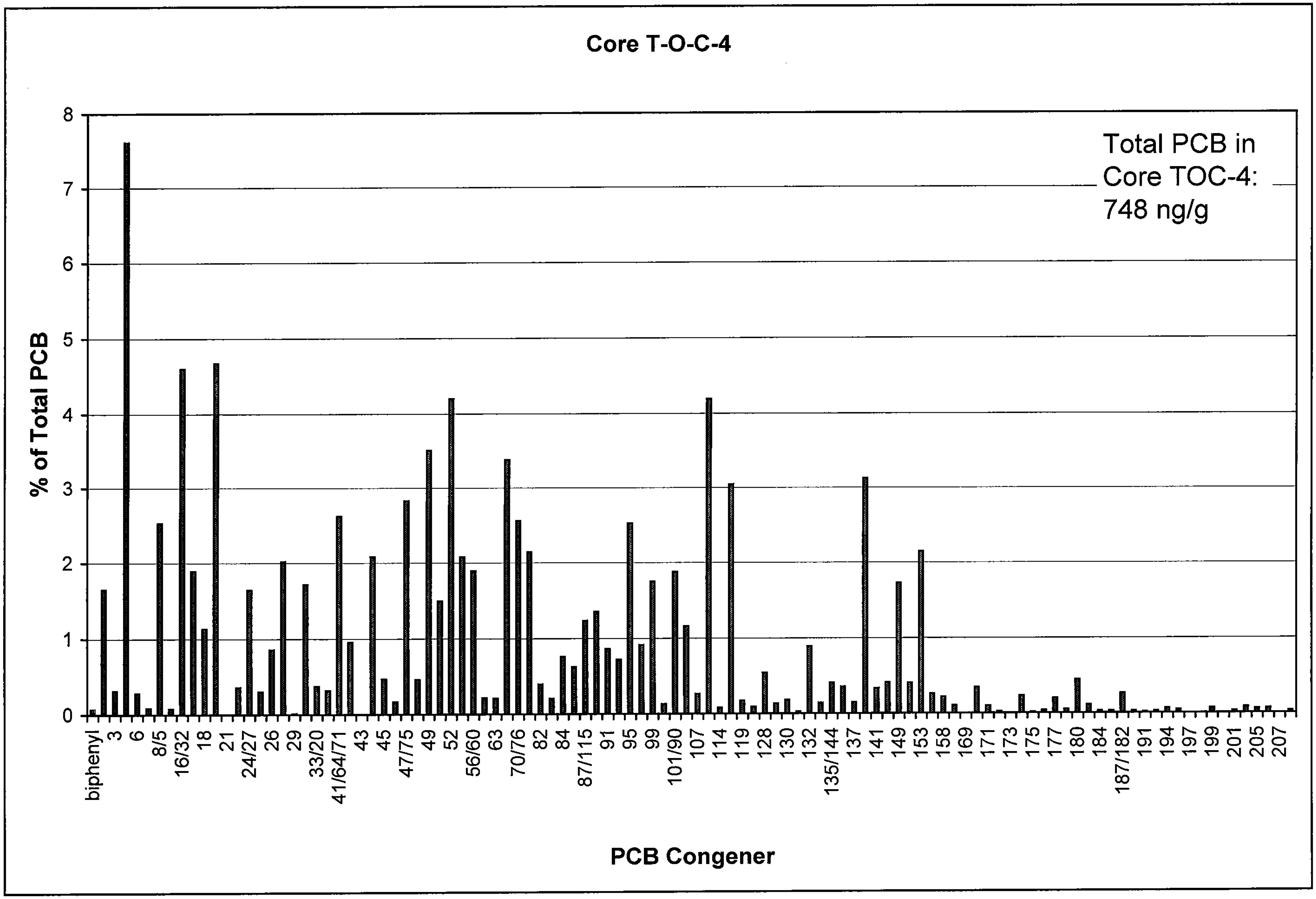
Core T-O-B-15 (70-75 cm)
Total PCB in Core TOB-15: 127 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
14
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

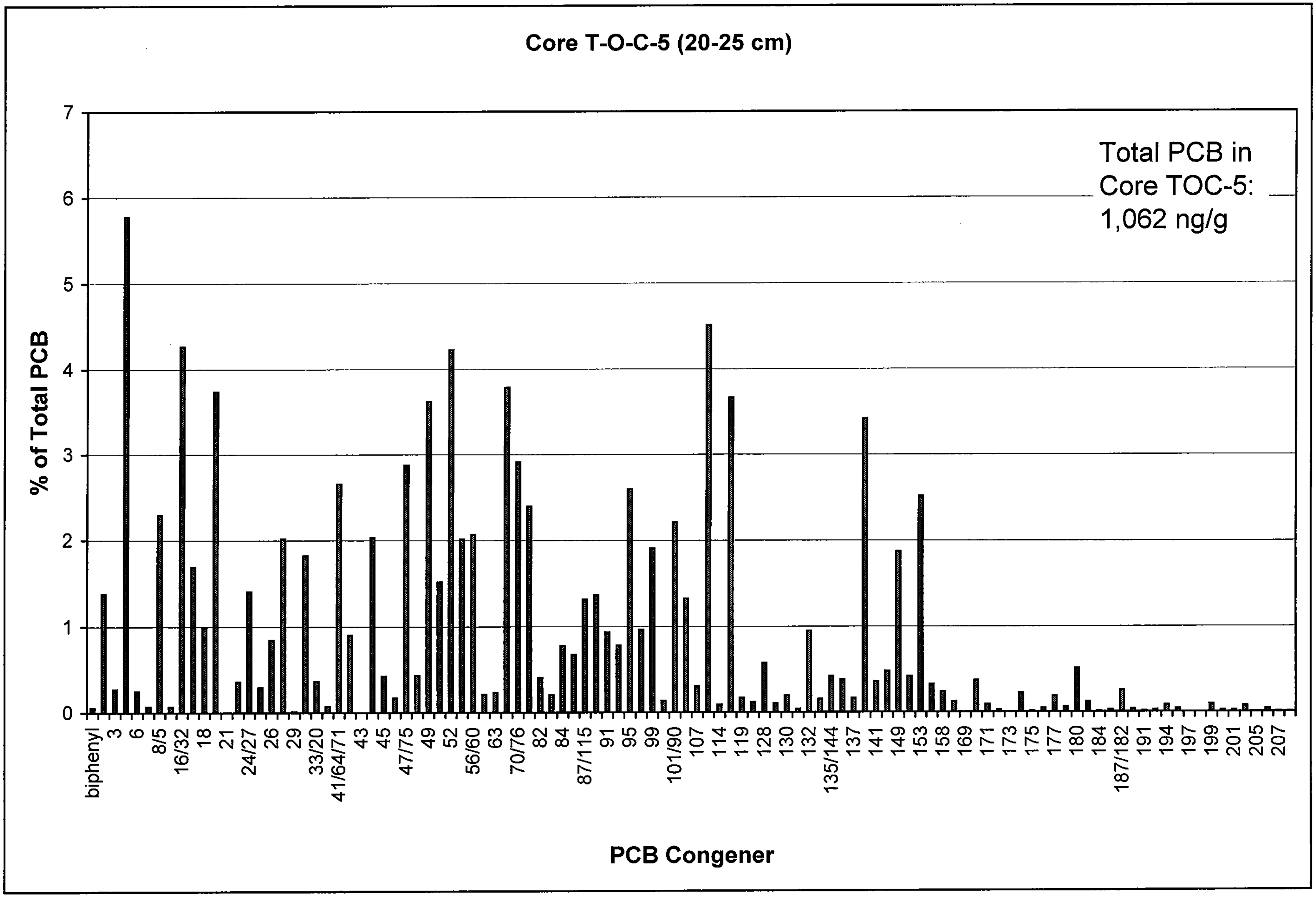

Core T-O-C-1 (0-5 cm)
Total PCB in Core TOC-1: 2,273 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

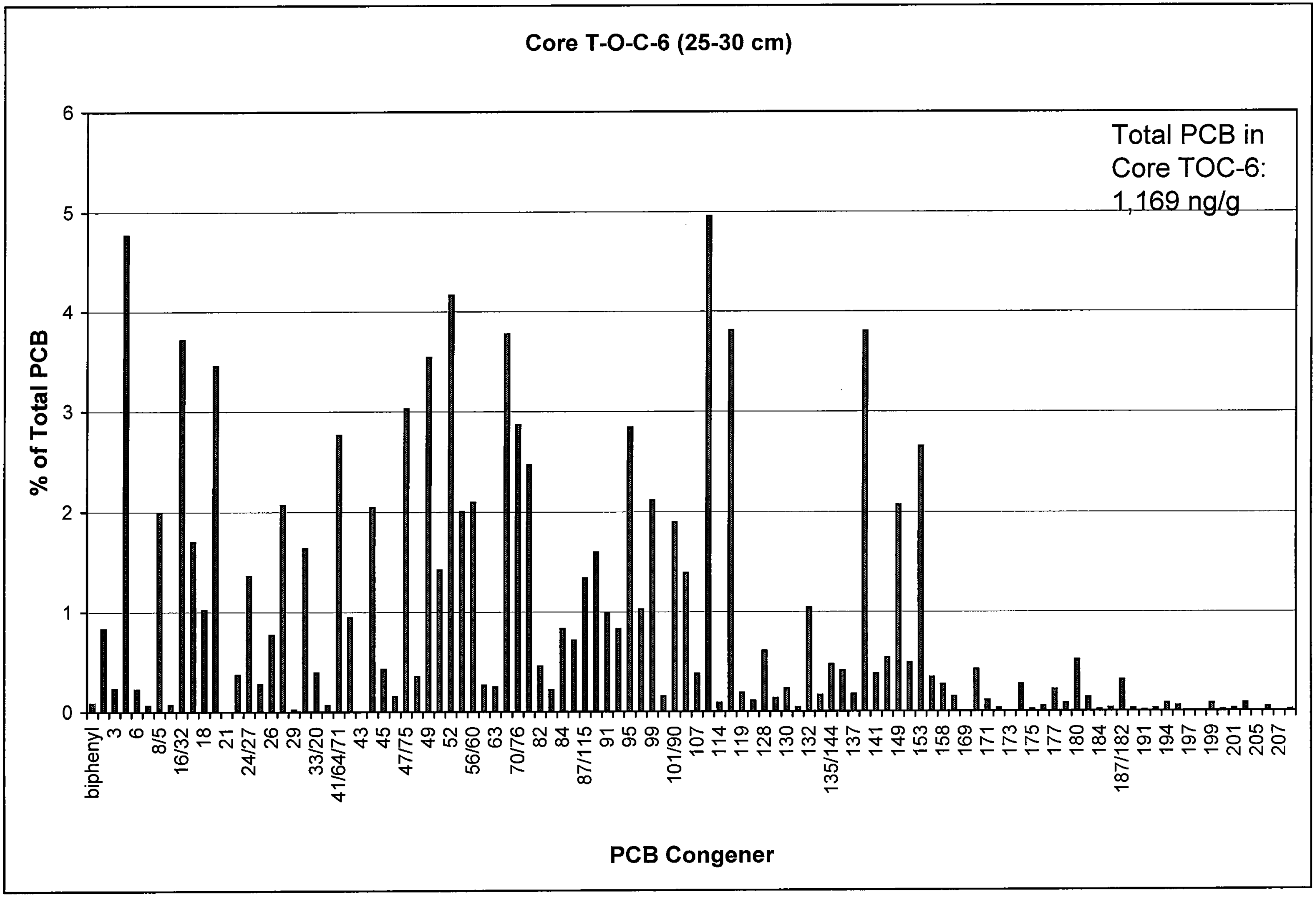

Core T-O-C-2 (5-10 cm)
Total PCB in Core TOC-2: 1,007 ng/g
% of Total PCB
0
1
2
3
4
5
6
7
8
9
10
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener



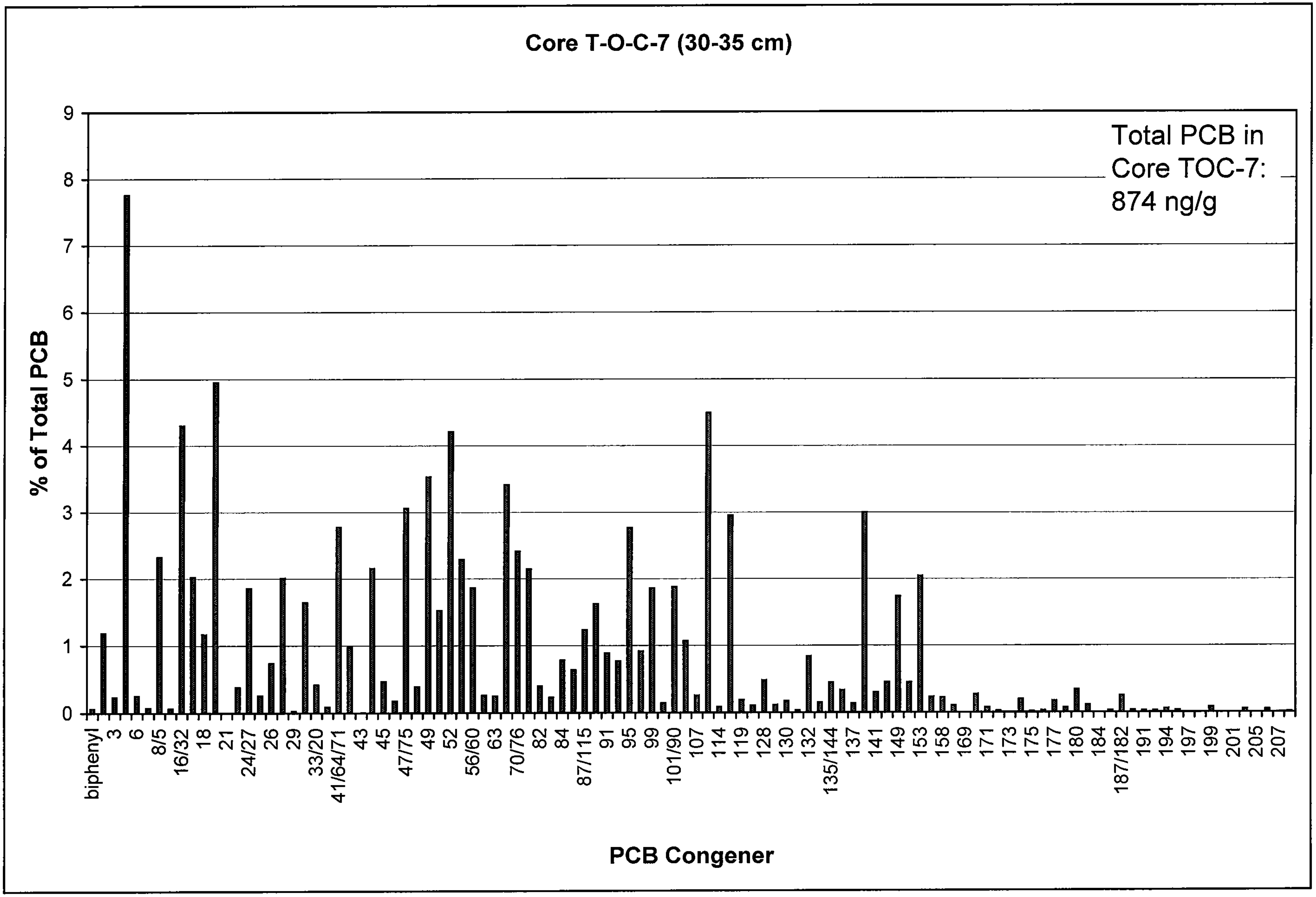
Core T-O-C-3 (10-15 cm)
Total PCB in
Core TOC-3:
523 ng/g
% of Total PCB
0
2
4
6
8
10
12
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener


Core T-O-C-4
Total PCB in Core TOC-4: 748 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

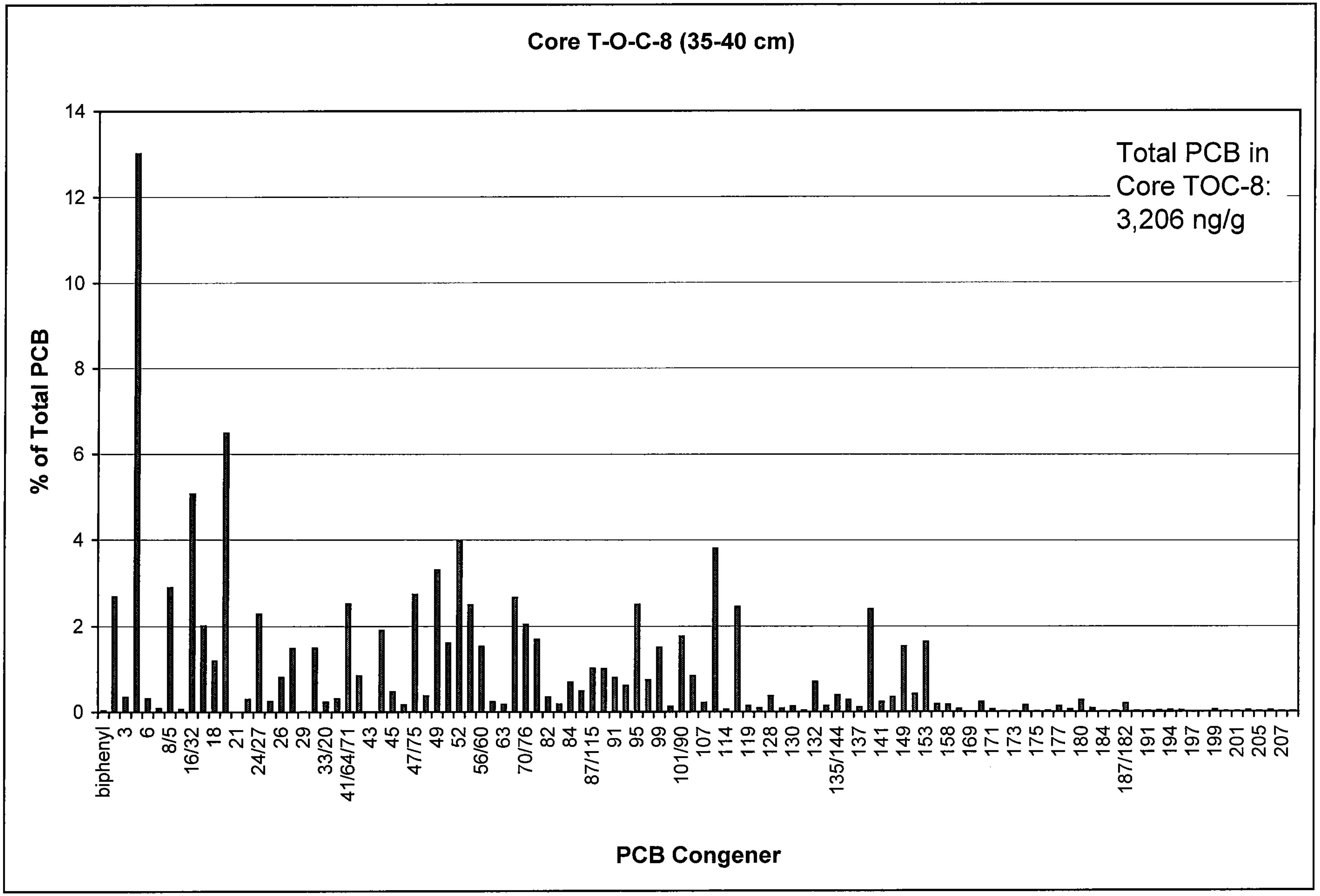

Core T-O-C-5 (20-25 cm)
Total PCB in Core TOC-5: 1,062 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207



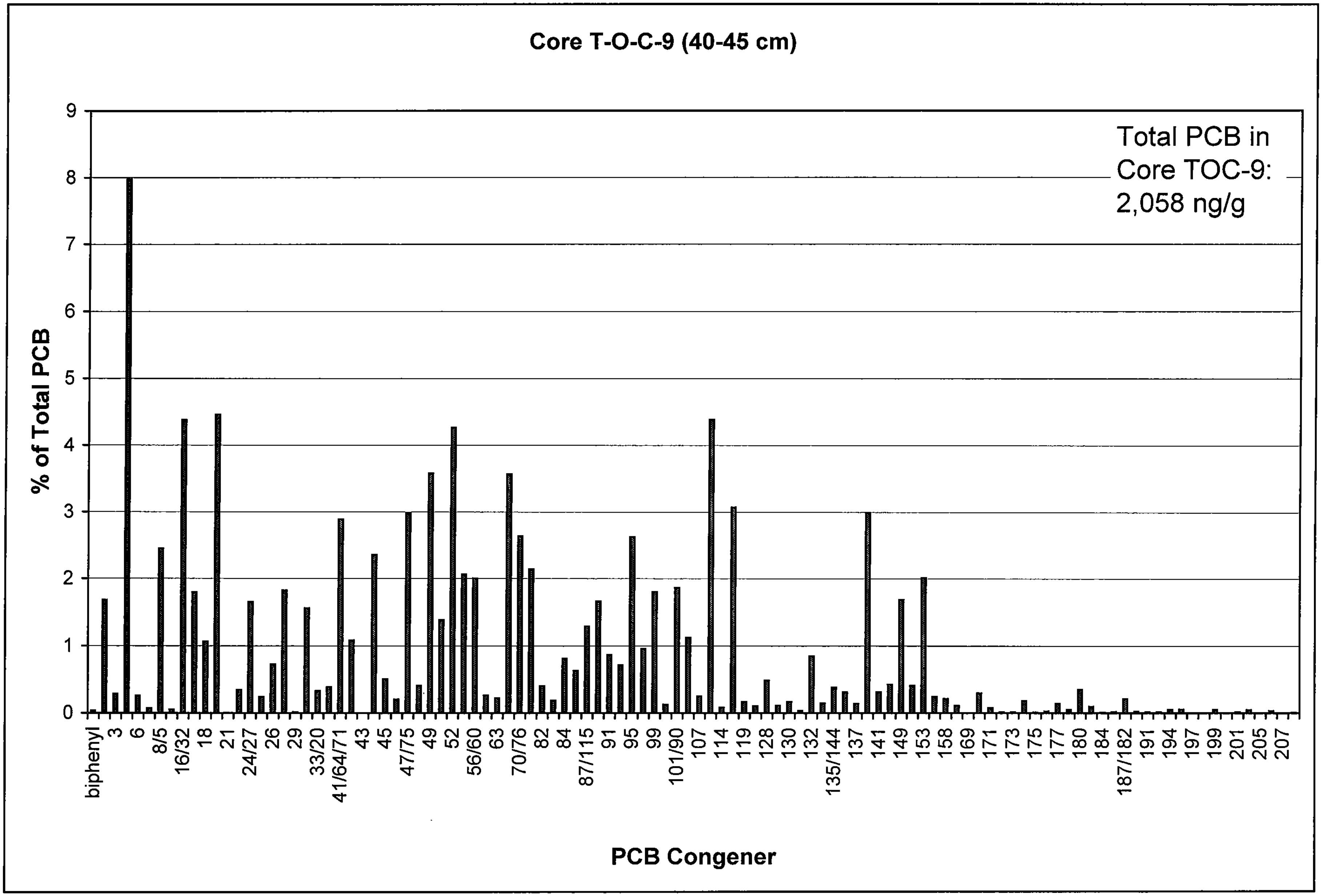
Core T-O-C-6 (25-30 cm)
Total PCB in Core TOC-6: 1,169 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207



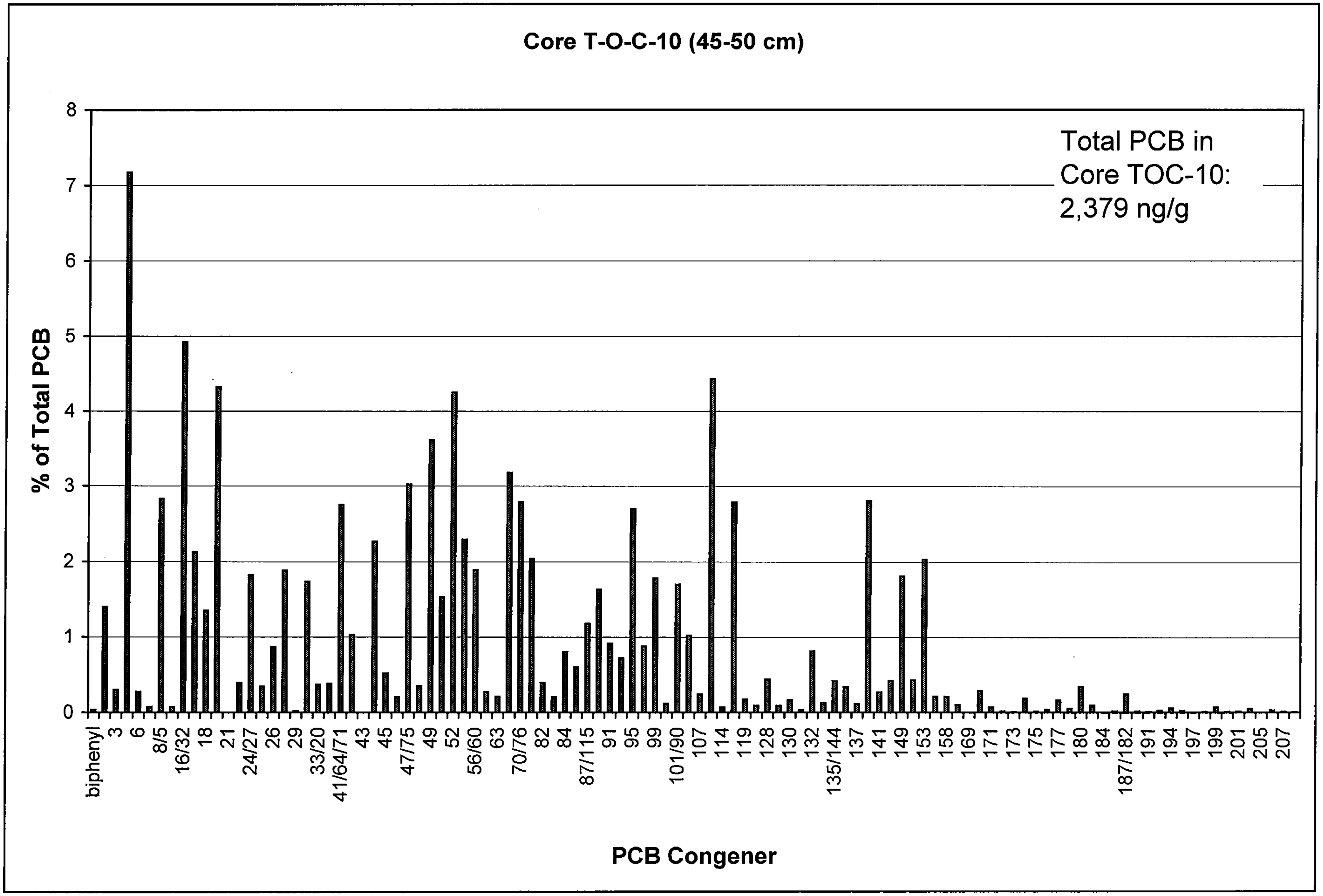
Core T-O-C-7 (30-35 cm)
Total PCB in Core TOC-7: 874 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207



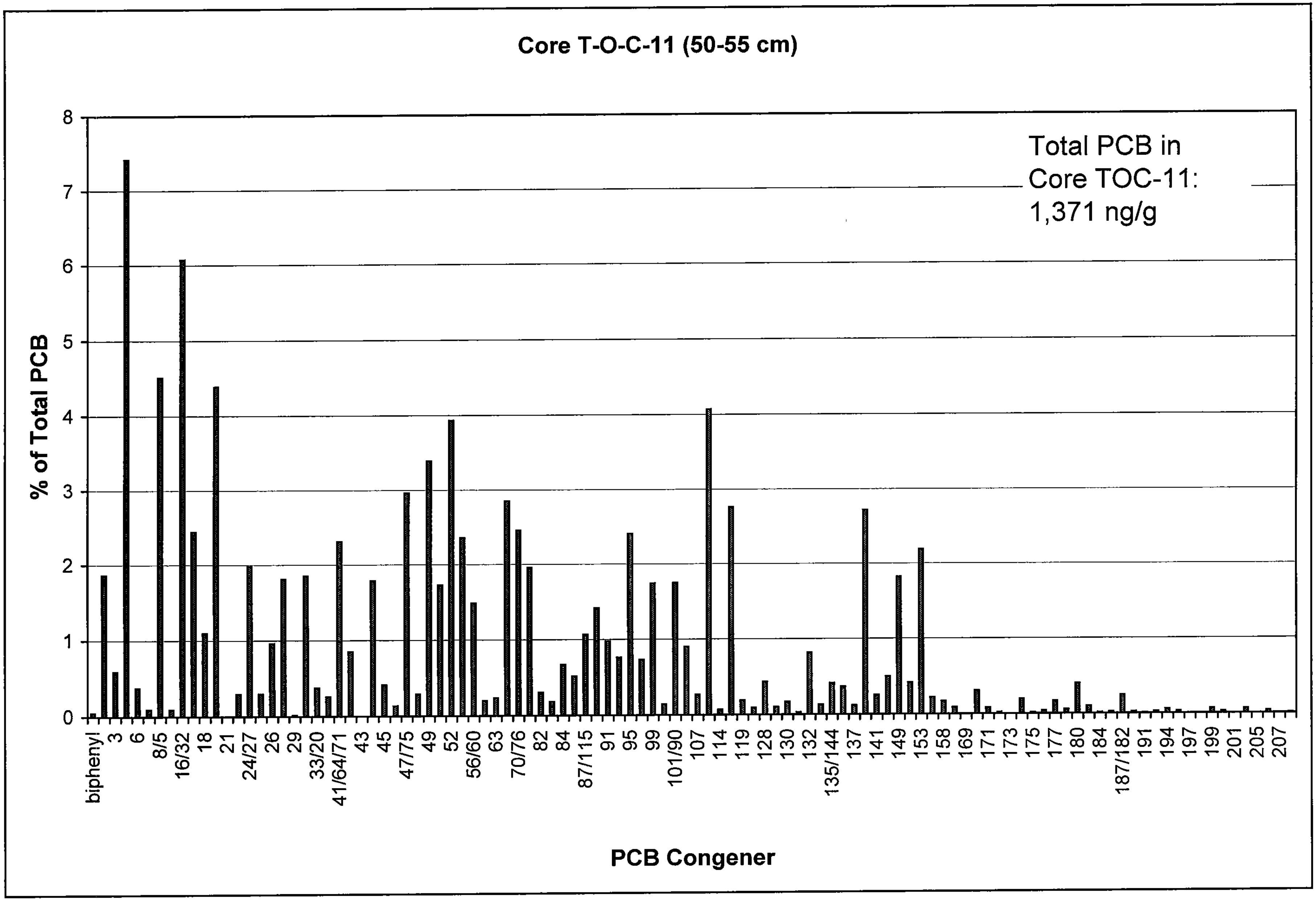
Core T-O-C-8 (35-40 cm)
% of Total PCB
Total PCB in Core TOC-8: 3,206 ng/g
PCB Congener
0
2
4
6
8
10
12
14
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

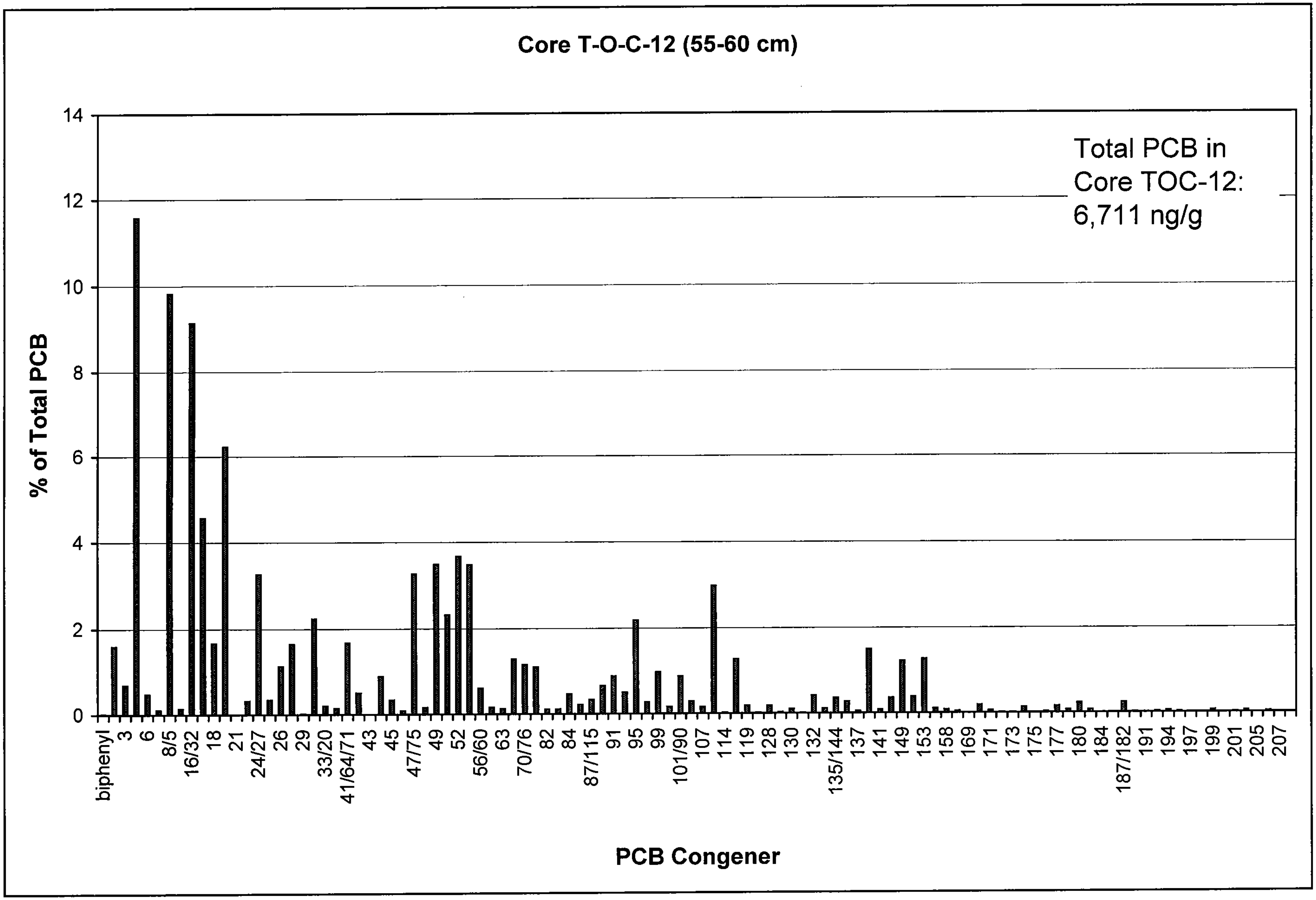


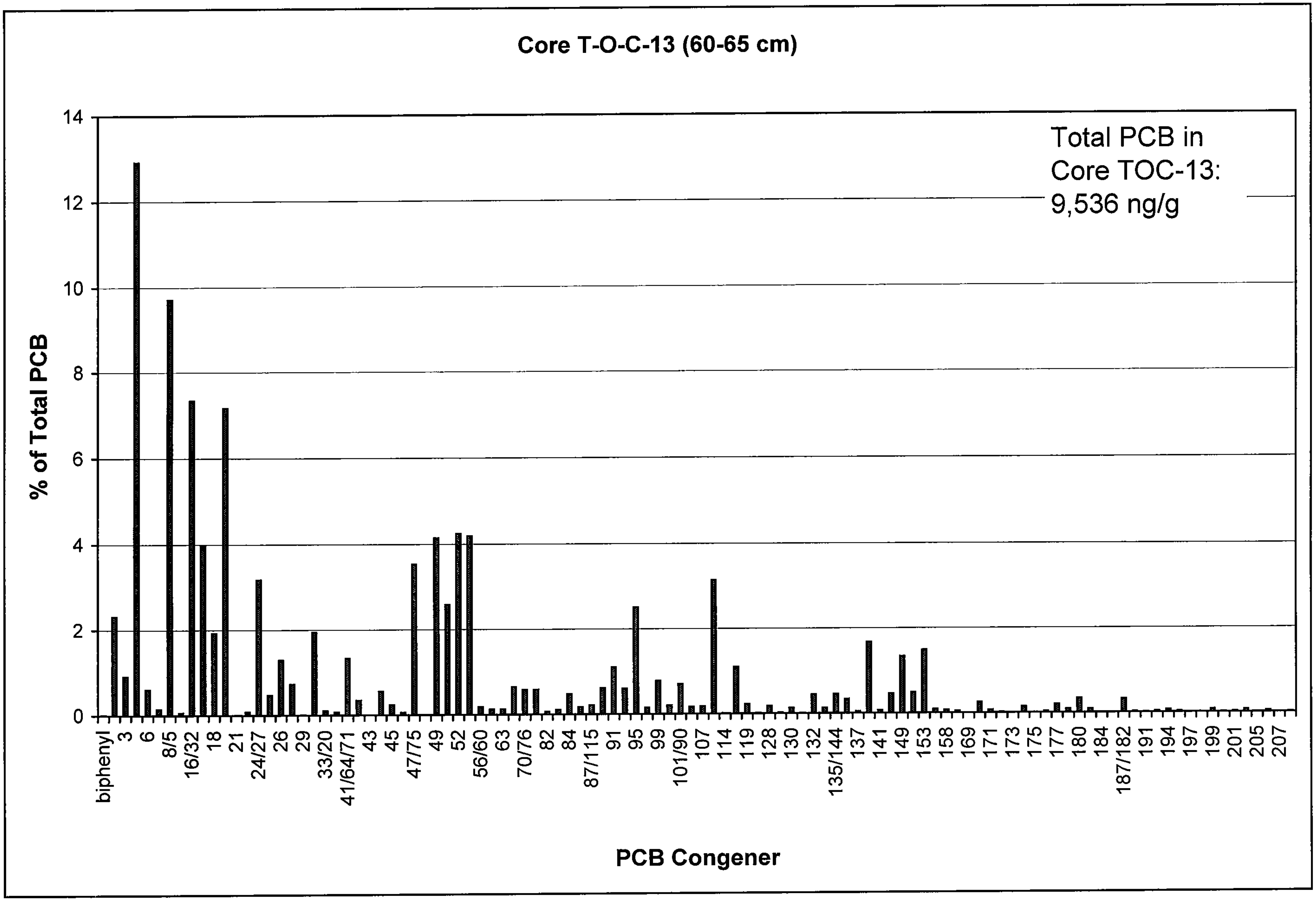
Core T-O-C-9 (40-45 cm)
Total PCB in Core TOC-9: 2,058 ng/g
% of Total PCB
PCB Congener
0
1
2
3
4
5
6
7
8
9
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207



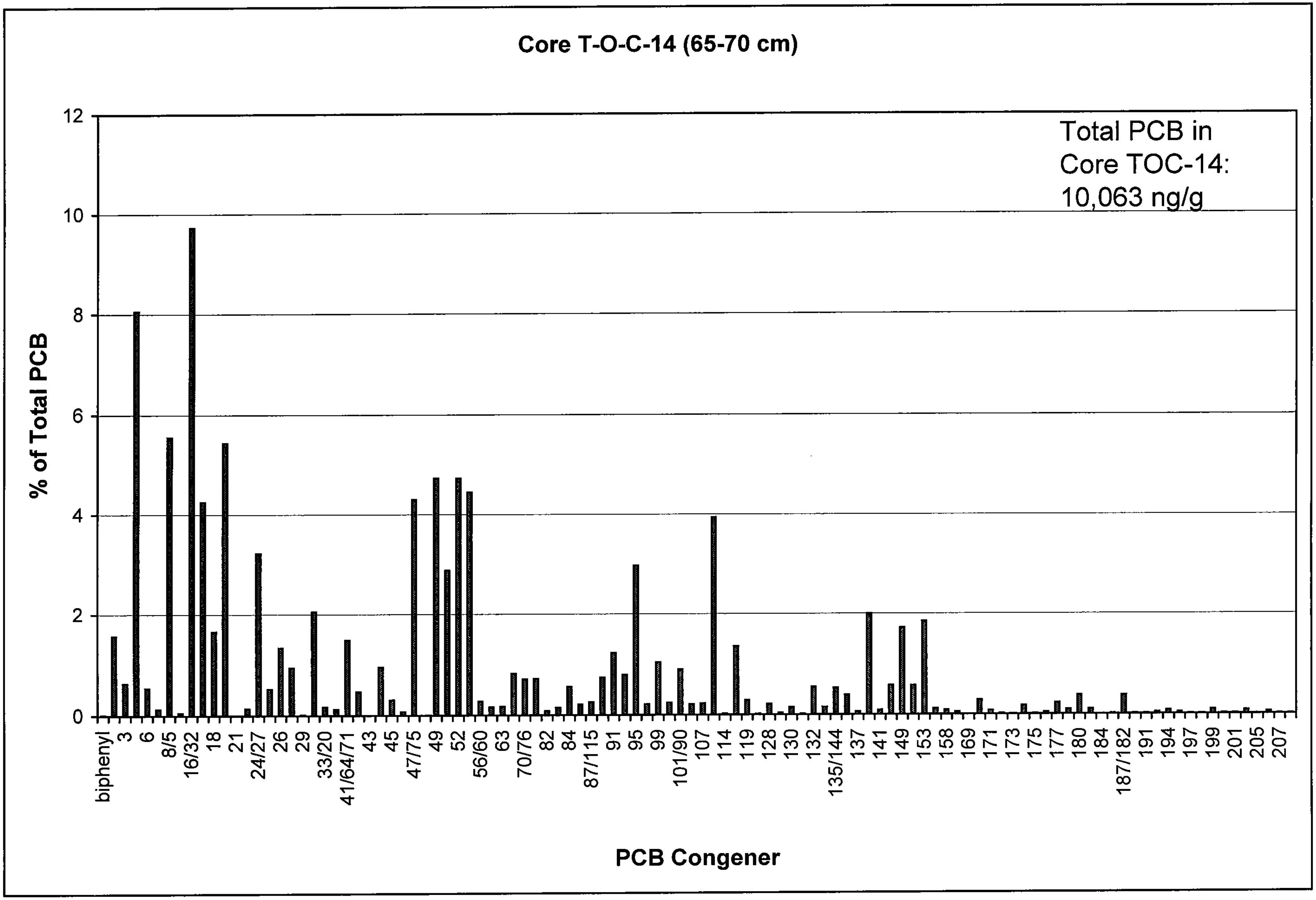
Core T-O-C-10 (45-50 cm)
Total PCB in
Core TOC-10:
2,379 ng/g
% of Total PCB
0
1
2
3
4
5
6
7
8
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener


Core T-O-C-11 (50-55 cm)
Total PCB in
Core TOC-11:
1,371 ng/g
% of Total PCB
8
7
6
5
4
3
2
1
0
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

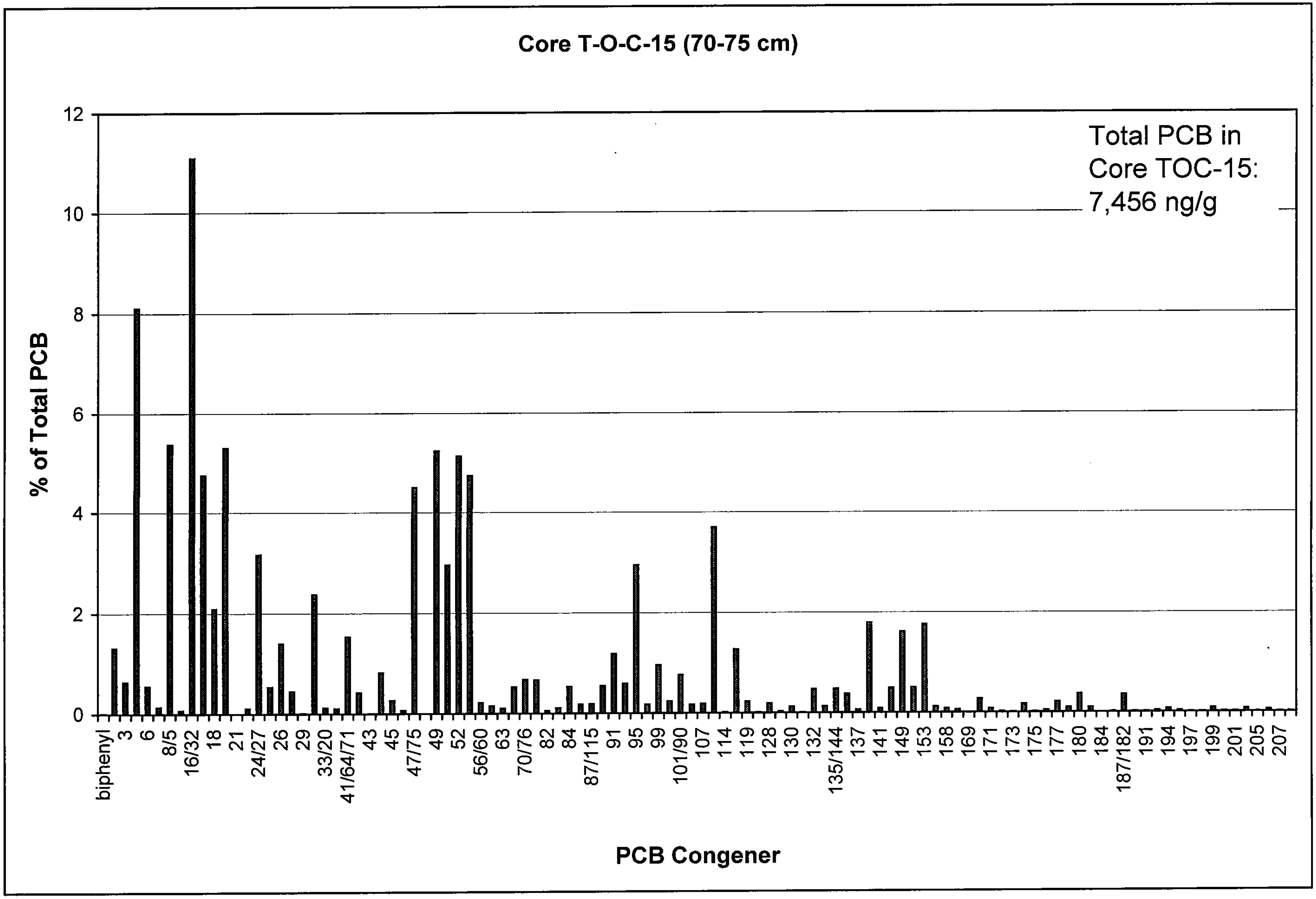

Core T-O-C-12 (55-60 cm)
Total PCB in
Core TOC-12:
6,711 ng/g
% of Total PCB
14
12
10
8
6
4
2
0
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

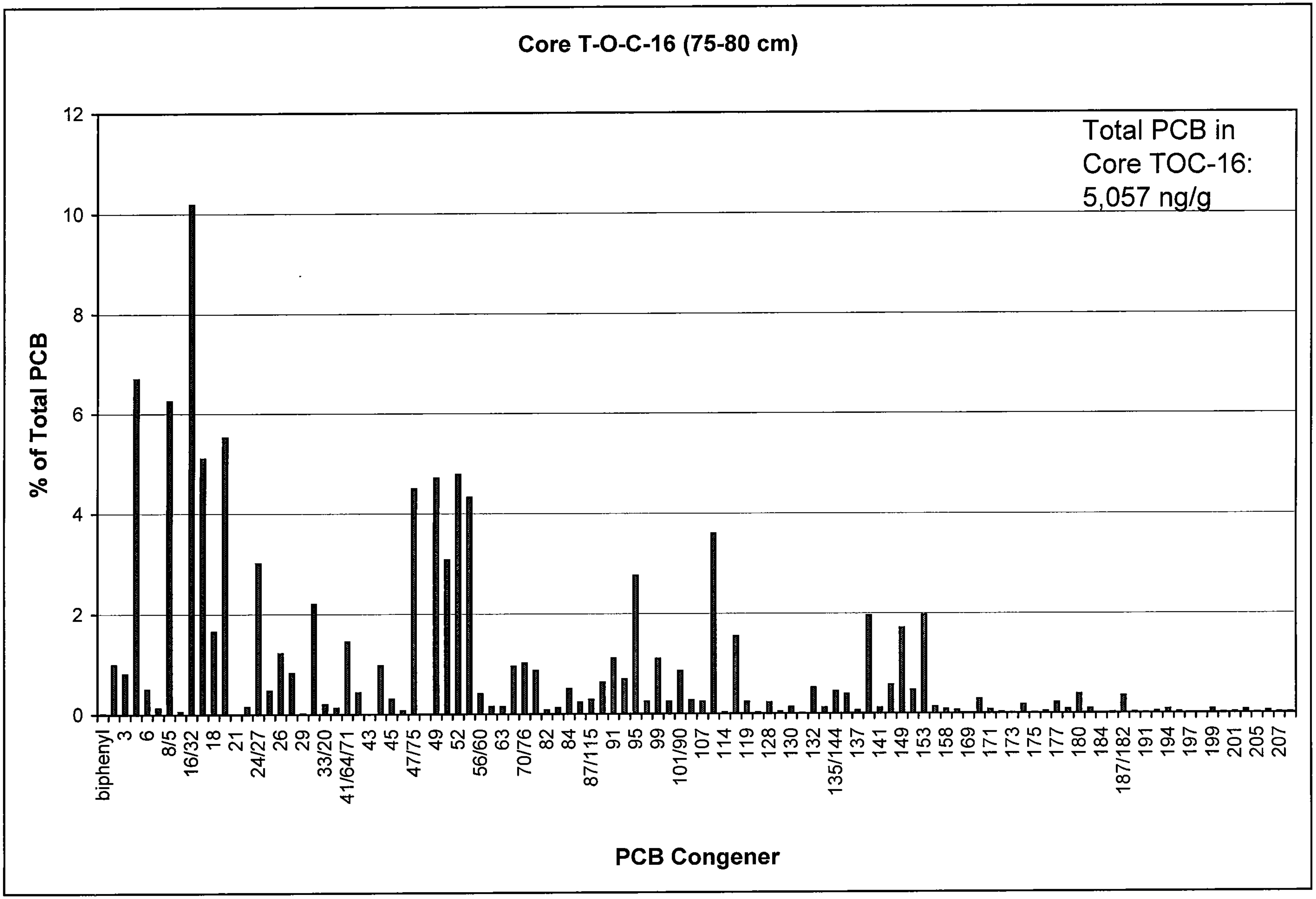


Core T-O-C-13 (60-65 cm)
Total PCB in
Core TOC-13:
9,536 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
14
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

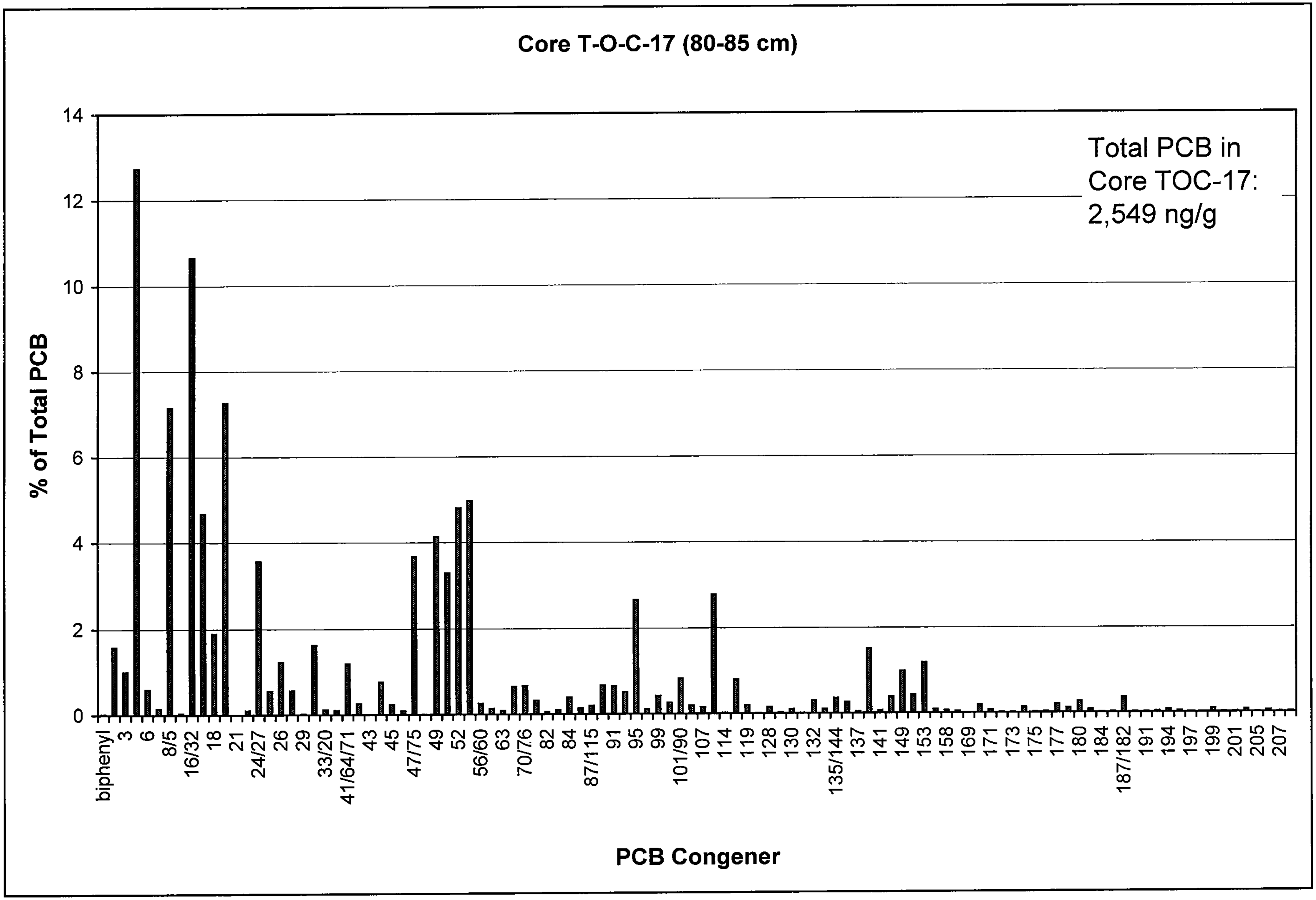


Core T-O-C-14 (65-70 cm)
Total PCB in
Core TOC-14:
10,063 ng/g
% of Total PCB
12
10
8
6
4
2
0
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

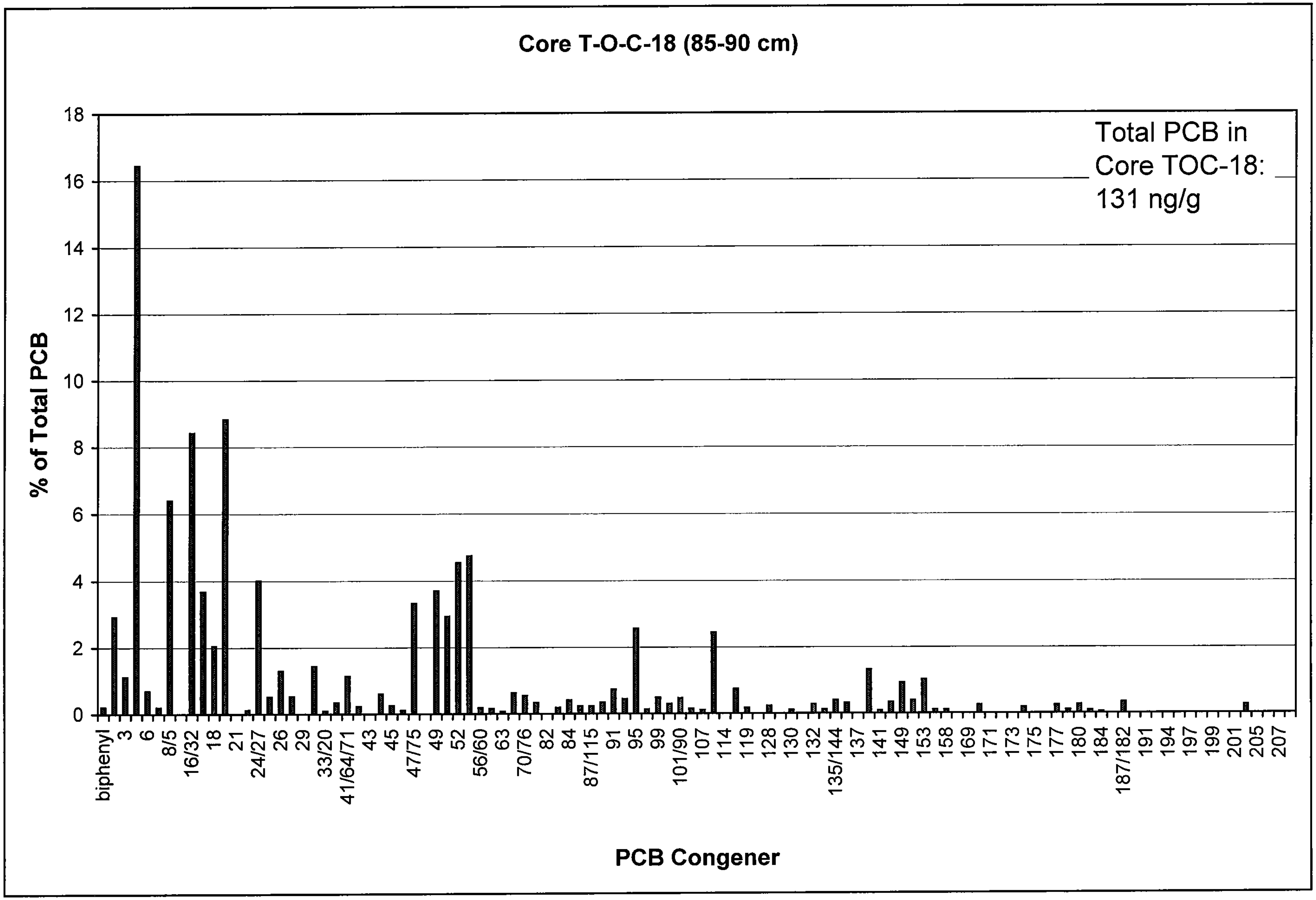

Core T-O-C-15 (70-75 cm)
Total PCB in
Core TOC-15:
7,456 ng/g
% of Total PCB
0
2
4
6
8
10
12
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener



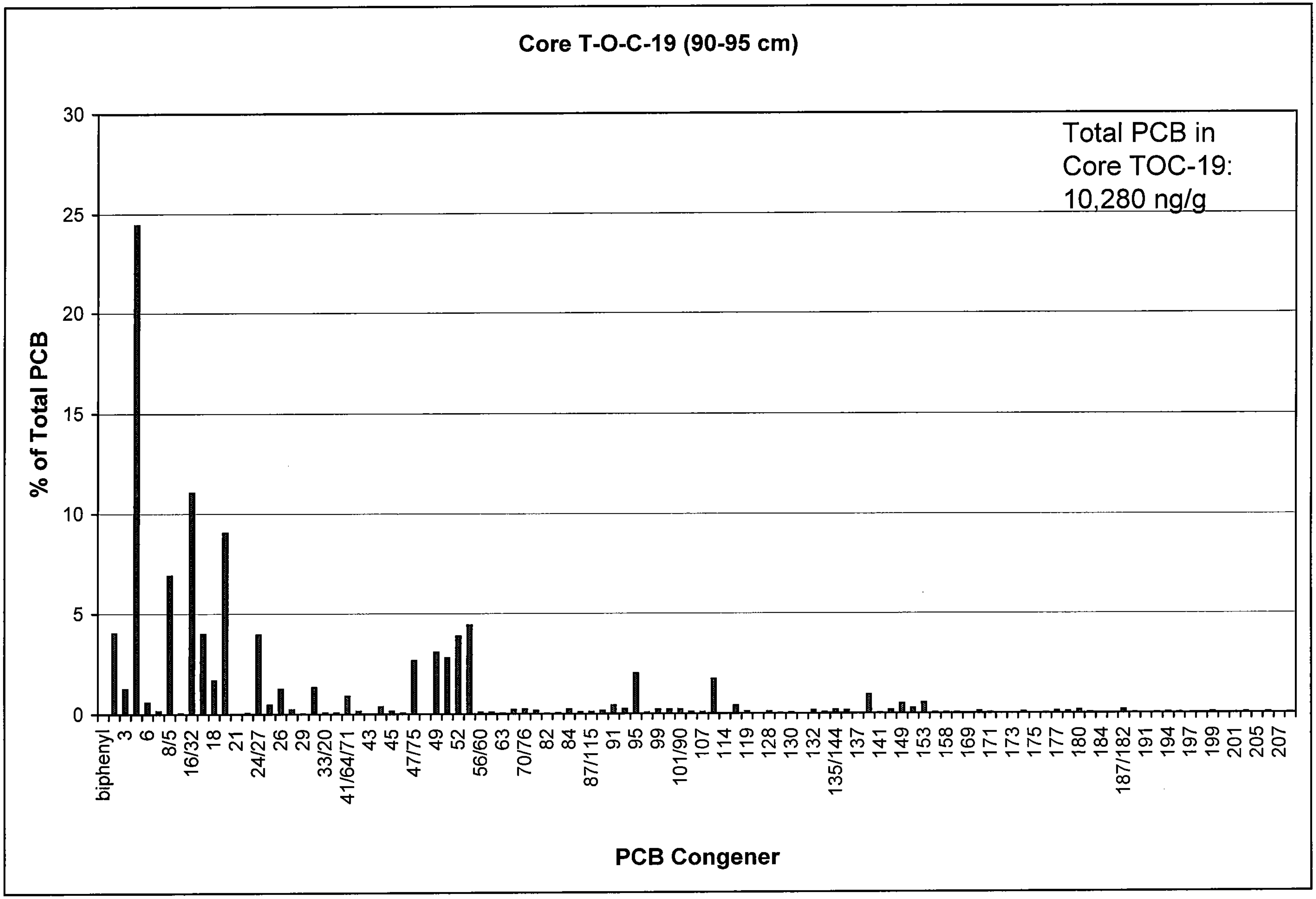
Core T-O-C-16 (75-80 cm)
Total PCB in Core TOC-16: 5,057 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

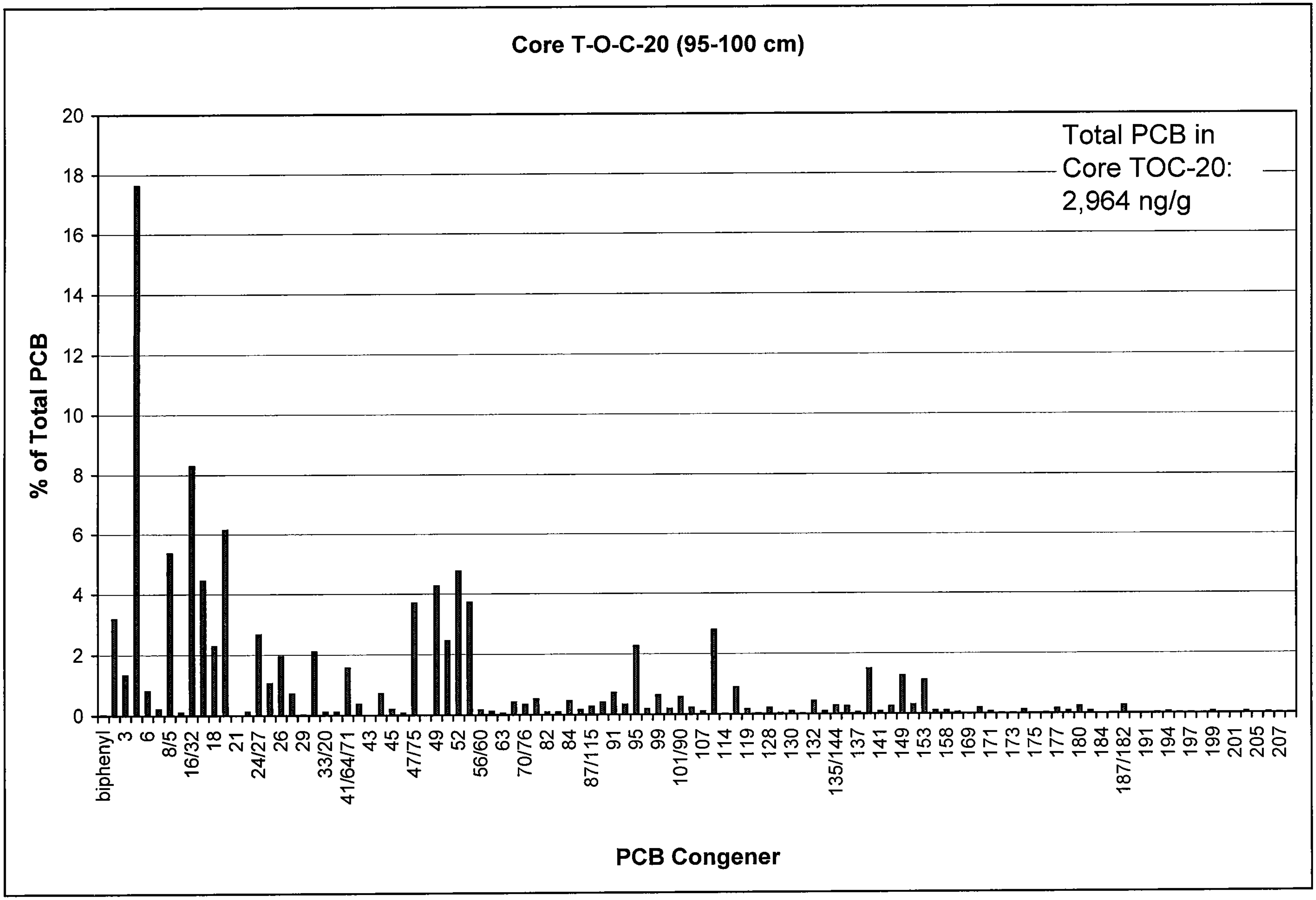


Core T-O-C-17 (80-85 cm)
Total PCB in Core TOC-17: 2,549 ng/g
% of Total PCB
0
2
4
6
8
10
12
14
PCB Congener
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207



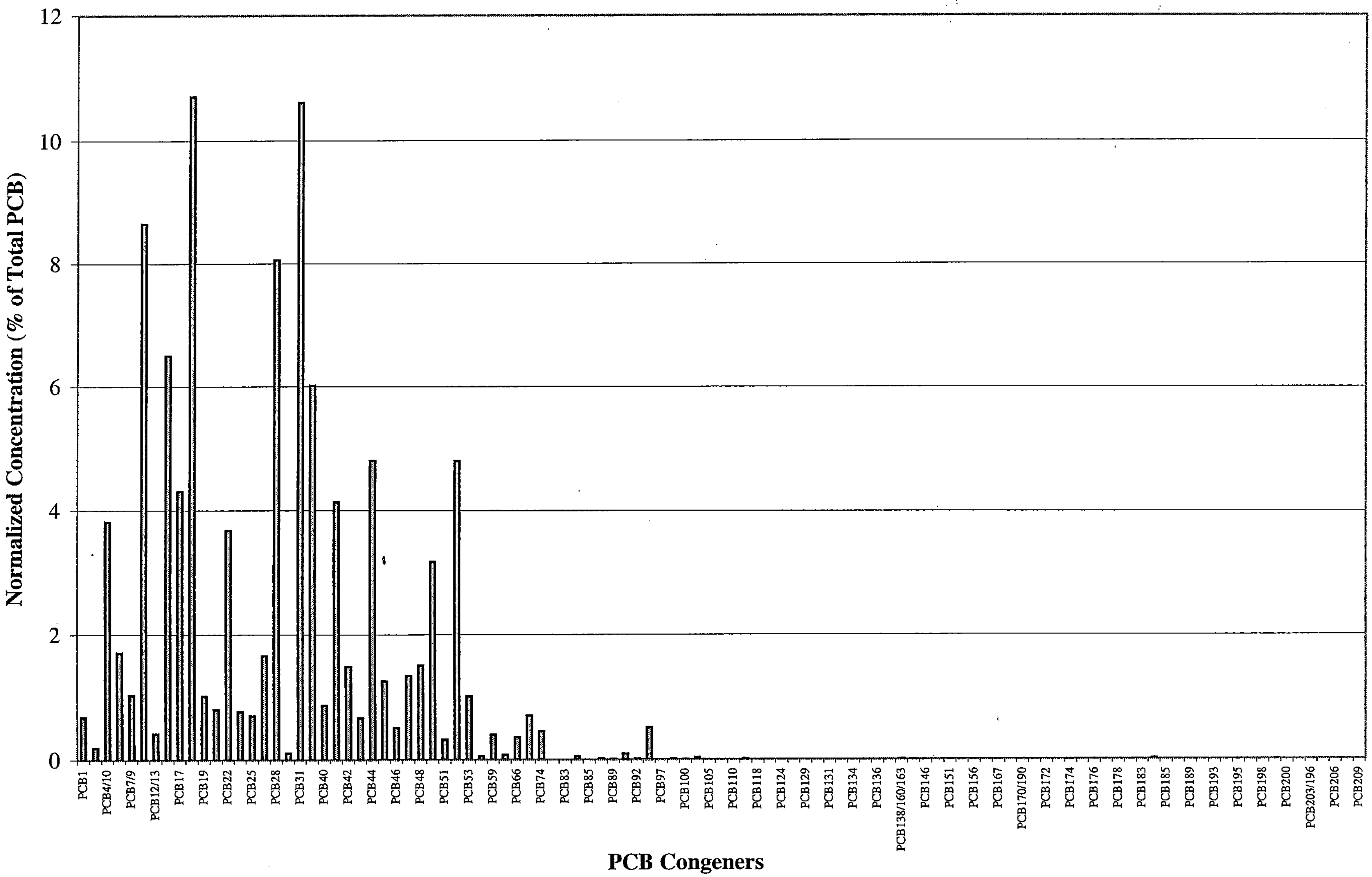
Core T-O-C-18 (85-90 cm)
Total PCB in
Core TOC-18:
131 ng/g
% of Total PCB
PCB Congener
0
2
4
6
8
10
12
14
16
18
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207

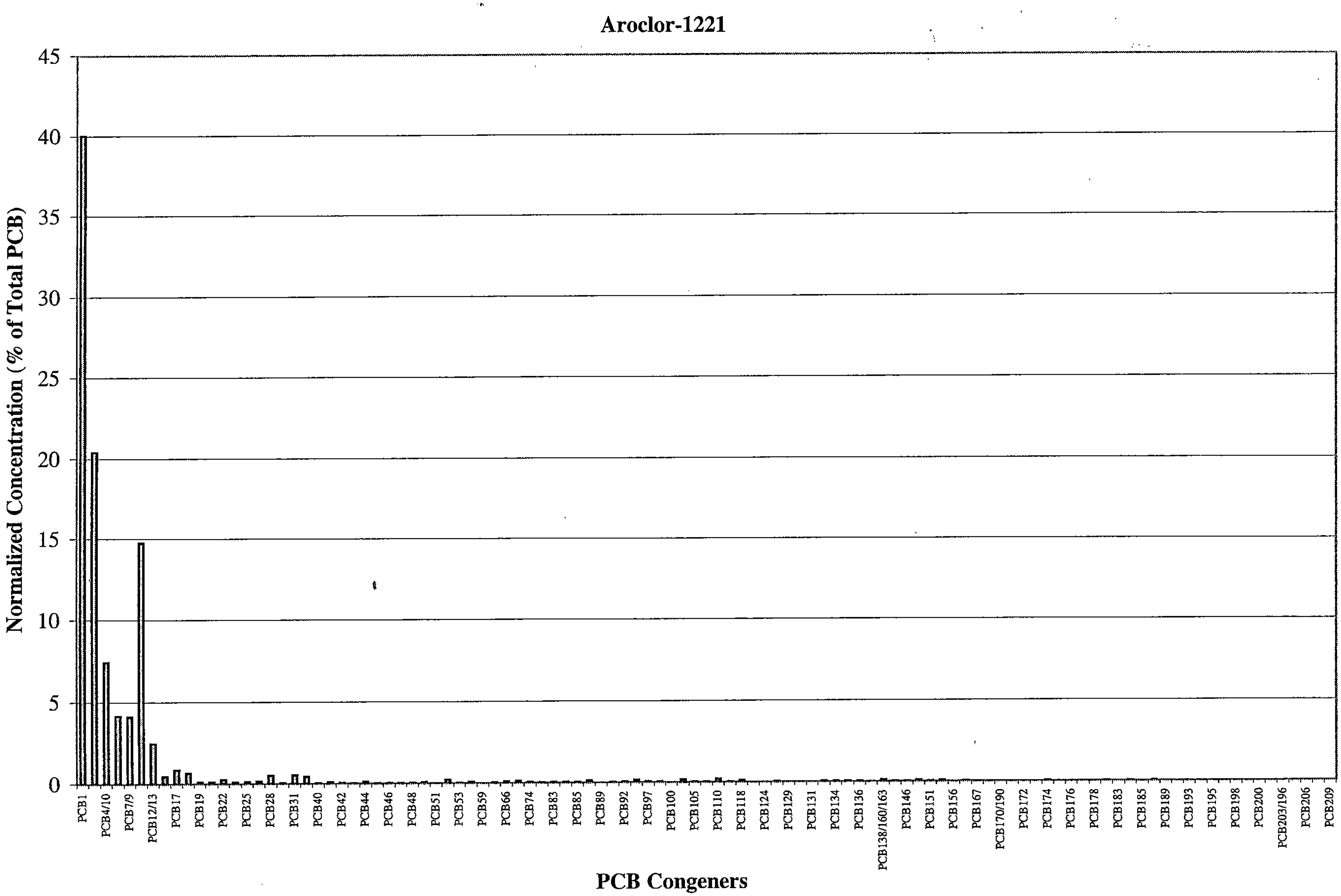

Core T-O-C-19 (90-95 cm)
Total PCB in
Core TOC-19:
10,280 ng/g
% of Total PCB
PCB Congener
0
5
10
15
20
25
30
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207



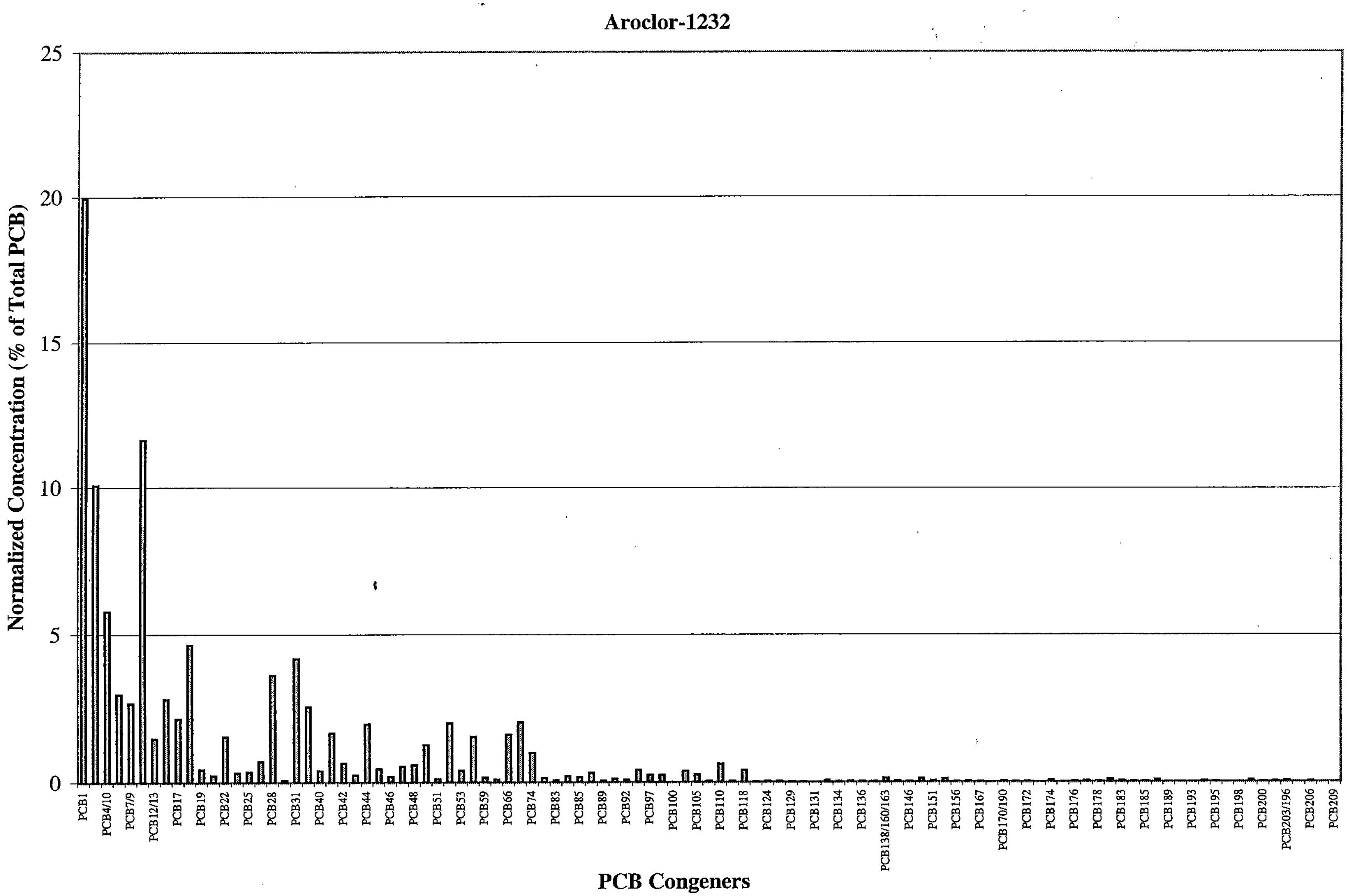
Core T-O-C-20 (95-100 cm)
Total PCB in Core TOC-20: 2,964 ng/g
% of Total PCB
0
2
4
6
8
10
12
14
16
18
20
biphenyl
3
6
8/5
16/32
18
21
24/27
26
29
33/20
41/64/71
43
45
47/75
49
52
56/60
63
70/76
82
84
87/115
91
95
99
101/90
107
114
119
128
130
132
135/144
137
141
149
153
158
169
171
173
175
177
180
184
187/182
191
194
197
199
201
205
207
PCB Congener

Aroclor-1016



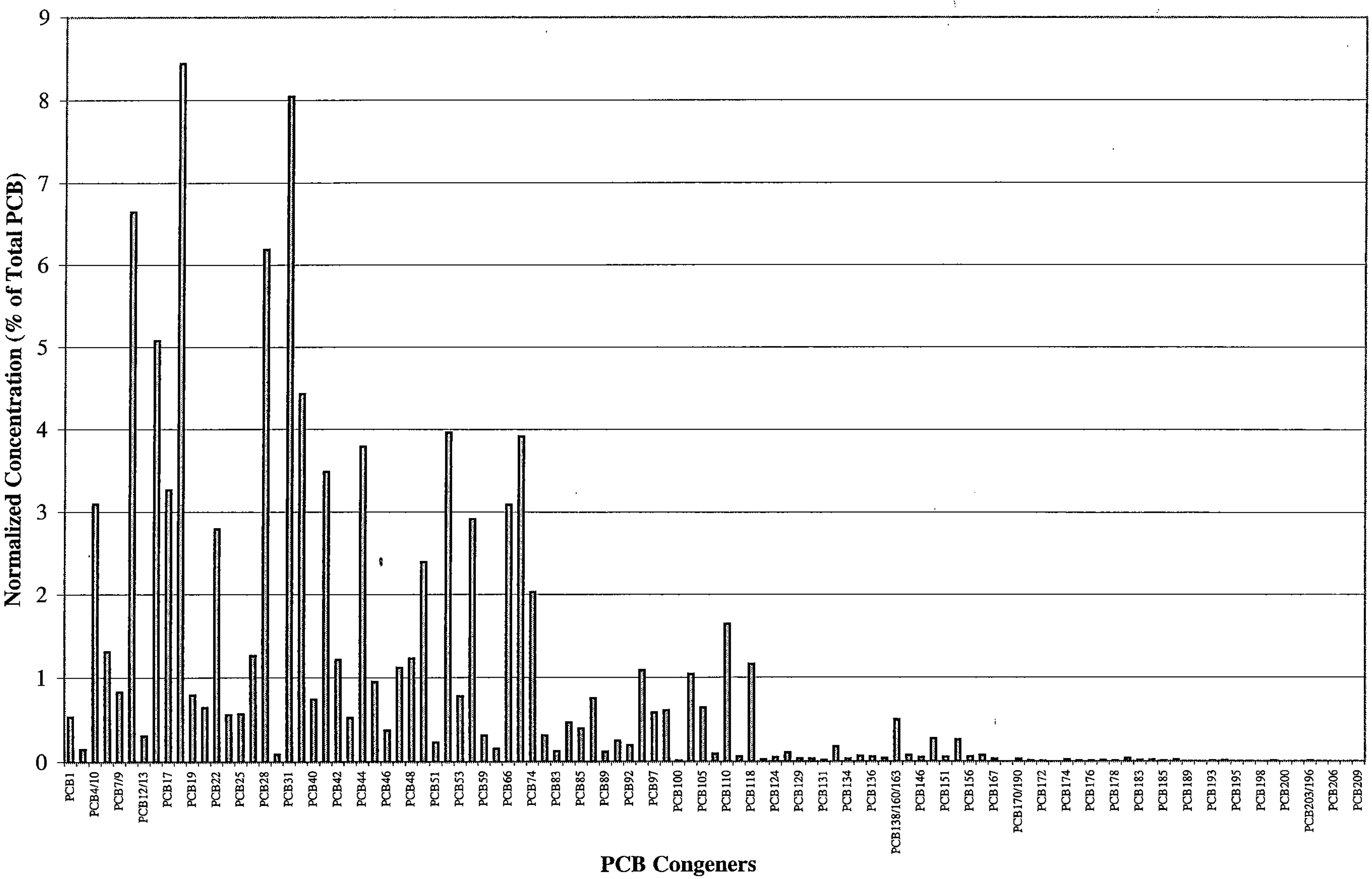


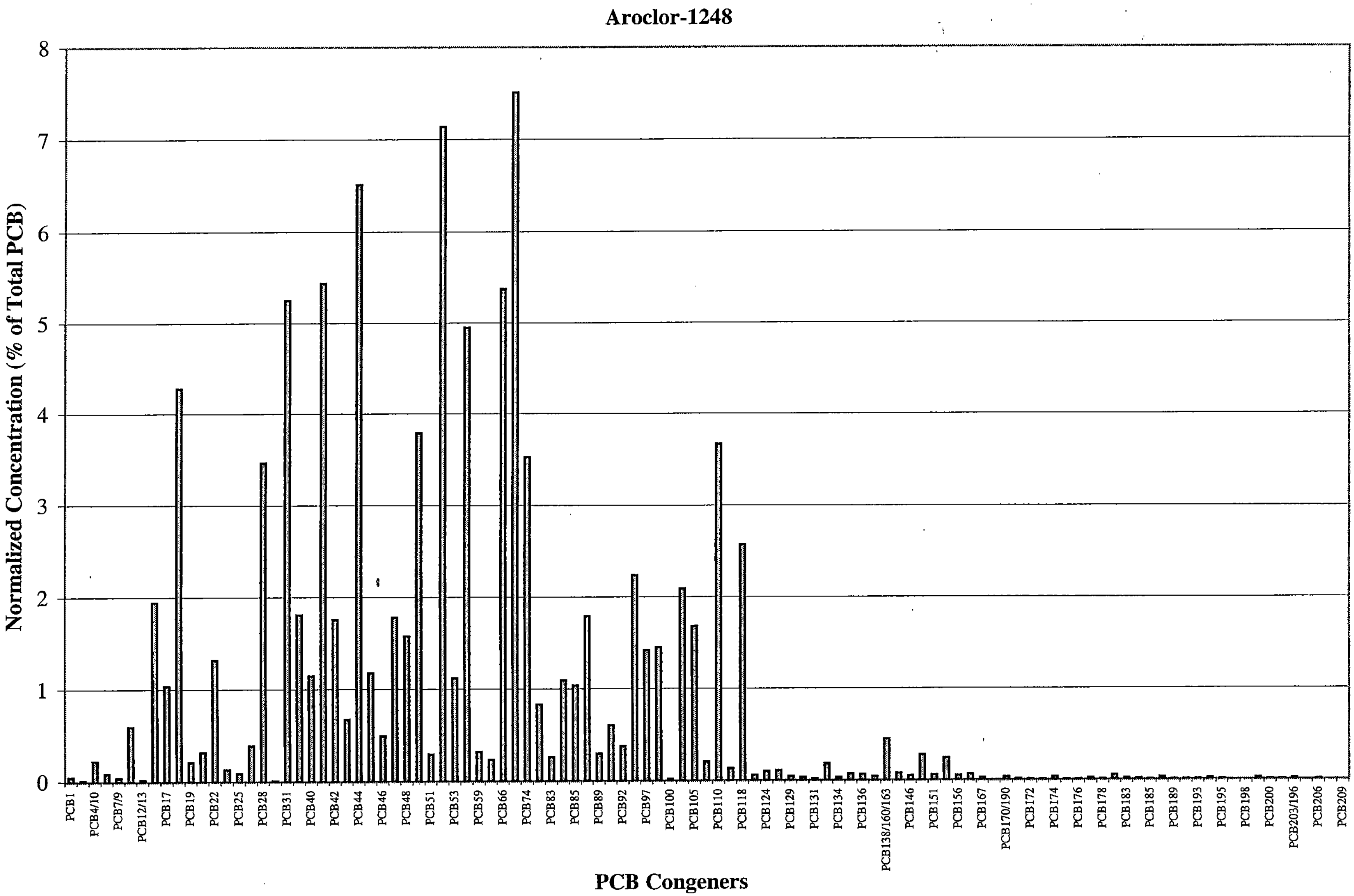
Aroclor-1221
Normalized Concentration (% of Total PCB)
45
40
35
30
25
20
15
10
5
0
PCB1
PCB4/10
PCB7/9
PCB12/13
PCB17
PCB19
PCB22
PCB25
PCB28
PCB31
PCB40
PCB42
PCB44
PCB46
PCB48
PCB51
PCB53
PCB59
PCB66
PCB74
PCB83
PCB85
PCB89
PCB92
PCB97
PCB100
PCB105
PCB110
PCB118
PCB124
PCB129
PCB131
PCB134
PCB136
PCB138/160/163
PCB146
PCB151
PCB156
PCB167
PCB170/190
PCB172
PCB174
PCB176
PCB178
PCB183
PCB185
PCB189
PCB193
PCB195
PCB198
PCB200
PCB203/196
PCB206
PCB209
PCB Congeners



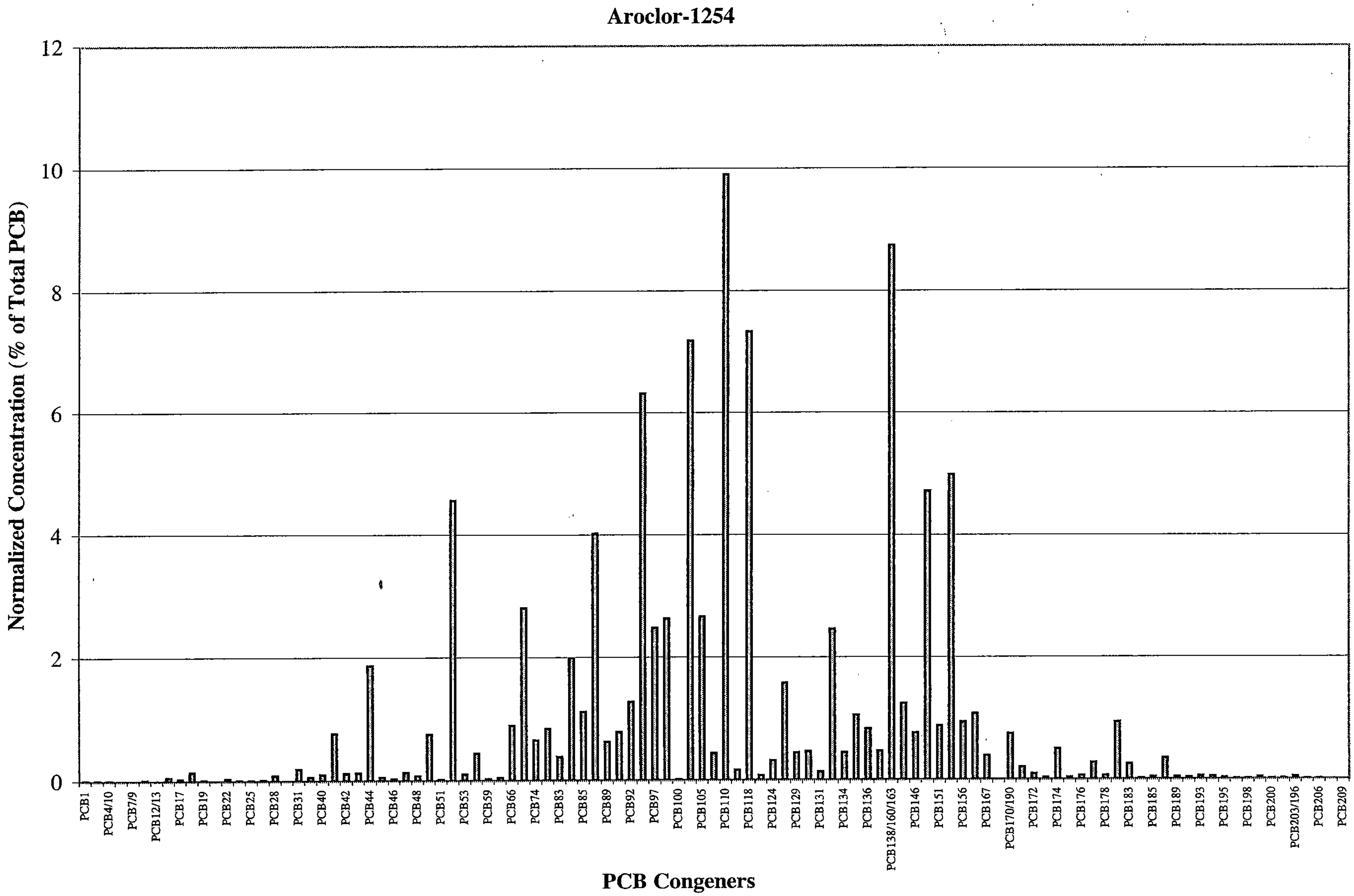
Aroclor-1232
Normalized Concentration (% of Total PCB)
25
20
15
10
5
0
PCB1
PCB4/10
PCB7/9
PCB12/13
PCB17
PCB19
PCB22
PCB25
PCB28
PCB31
PCB40
PCB42
PCB44
PCB46
PCB48
PCB51
PCB53
PCB59
PCB66
PCB74
PCB83
PCB85
PCB89
PCB92
PCB97
PCB100
PCB105
PCB110
PCB118
PCB124
PCB129
PCB131
PCB134
PCB136
PCB138/160/163
PCB146
PCB151
PCB156
PCB167
PCB170/190
PCB172
PCB174
PCB176
PCB178
PCB183
PCB185
PCB189
PCB193
PCB195
PCB198
PCB200
PCB203/196
PCB206
PCB209
PCB Congeners

Aroclor-1242

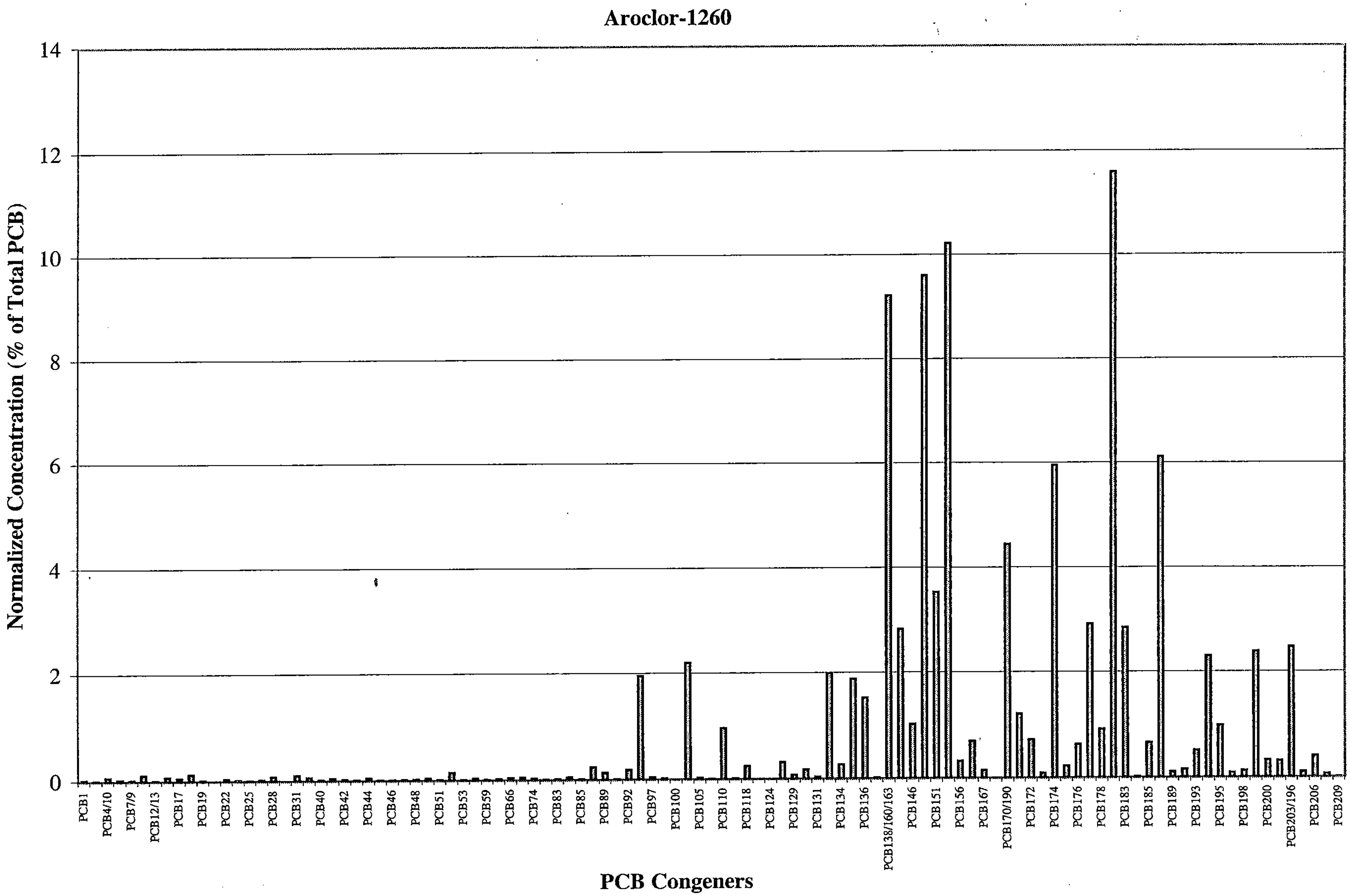




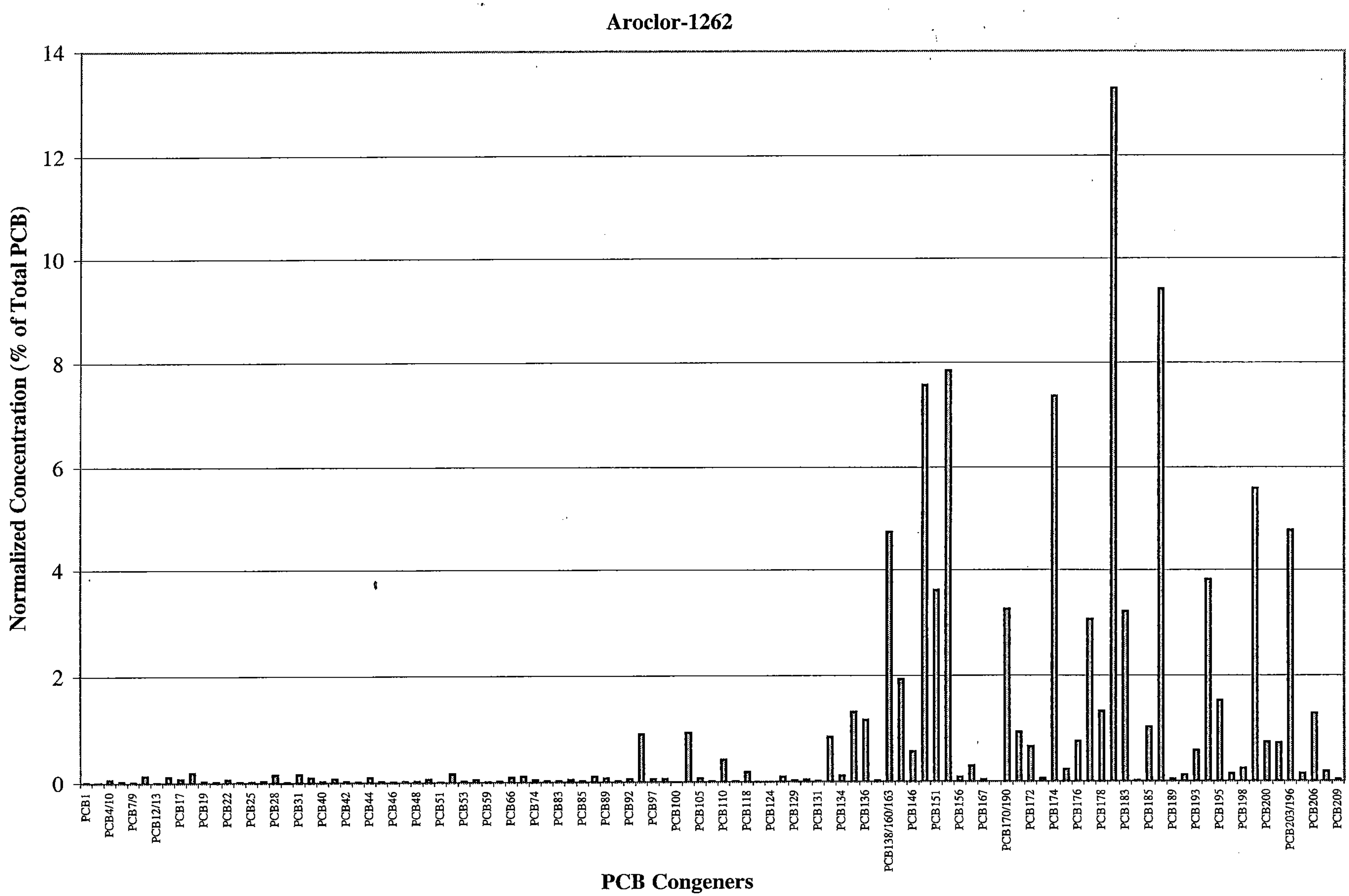
Aroclor-1248
Normalized Concentration (% of Total PCB)
0
1
2
3
4
5
6
7
8
PCB1
PCB4/10
PCB7/9
PCB12/13
PCB17
PCB19
PCB22
PCB25
PCB28
PCB31
PCB40
PCB42
PCB44
PCB46
PCB48
PCB51
PCB53
PCB59
PCB66
PCB74
PCB83
PCB85
PCB89
PCB92
PCB97
PCB100
PCB105
PCB110
PCB118
PCB124
PCB129
PCB131
PCB134
PCB136
PCB138/160/163
PCB146
PCB151
PCB156
PCB167
PCB170/190
PCB172
PCB174
PCB176
PCB178
PCB183
PCB185
PCB189
PCB193
PCB195
PCB198
PCB200
PCB203/196
PCB206
PCB209
PCB Congeners



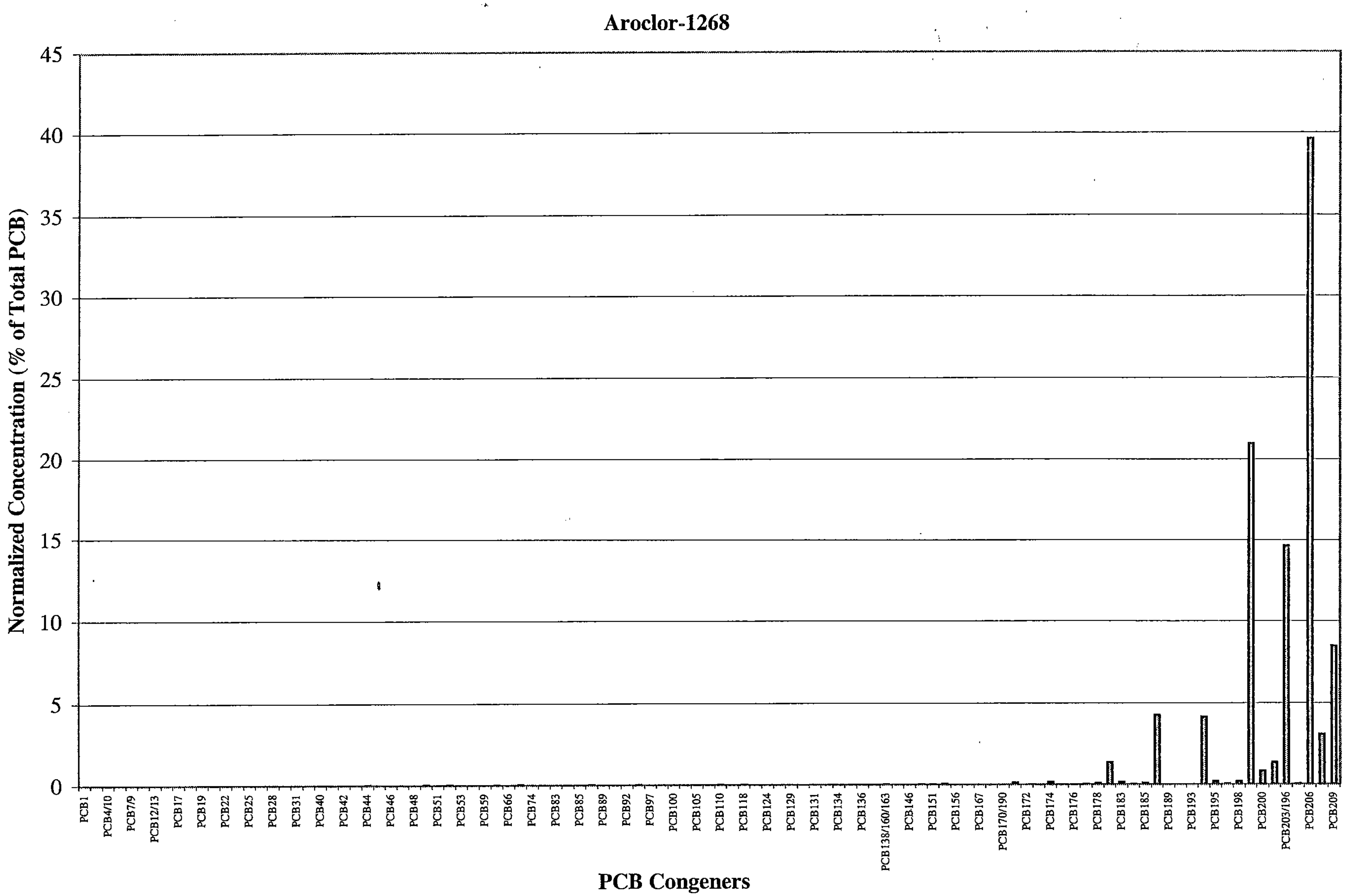
Aroclor-1254
Normalized Concentration (% of Total PCB)
0
2
4
6
8
10
12
PCB Congeners
PCB1
PCB4/10
PCB7/9
PCB12/13
PCB17
PCB19
PCB22
PCB25
PCB28
PCB31
PCB40
PCB42
PCB44
PCB46
PCB48
PCB51
PCB53
PCB59
PCB66
PCB74
PCB83
PCB85
PCB89
PCB92
PCB97
PCB100
PCB105
PCB110
PCB118
PCB124
PCB129
PCB131
PCB134
PCB136
PCB138/160/163
PCB146
PCB151
PCB156
PCB167
PCB170/190
PCB172
PCB174
PCB176
PCB178
PCB183
PCB185
PCB189
PCB193
PCB195
PCB198
PCB200
PCB203/196
PCB206
PCB209



Aroclor-1260
Normalized Concentration (% of Total PCB)
0
2
4
6
8
10
12
14
PCB1
PCB4/10
PCB7/9
PCB12/13
PCB17
PCB19
PCB22
PCB25
PCB28
PCB31
PCB40
PCB42
PCB44
PCB46
PCB48
PCB51
PCB53
PCB59
PCB66
PCB74
PCB83
PCB85
PCB89
PCB92
PCB97
PCB100
PCB105
PCB110
PCB118
PCB124
PCB129
PCB131
PCB134
PCB136
PCB138/160/163
PCB146
PCB151
PCB156
PCB167
PCB170/190
PCB172
PCB174
PCB176
PCB178
PCB183
PCB185
PCB189
PCB193
PCB195
PCB198
PCB200
PCB203/196
PCB206
PCB209
PCB Congeners

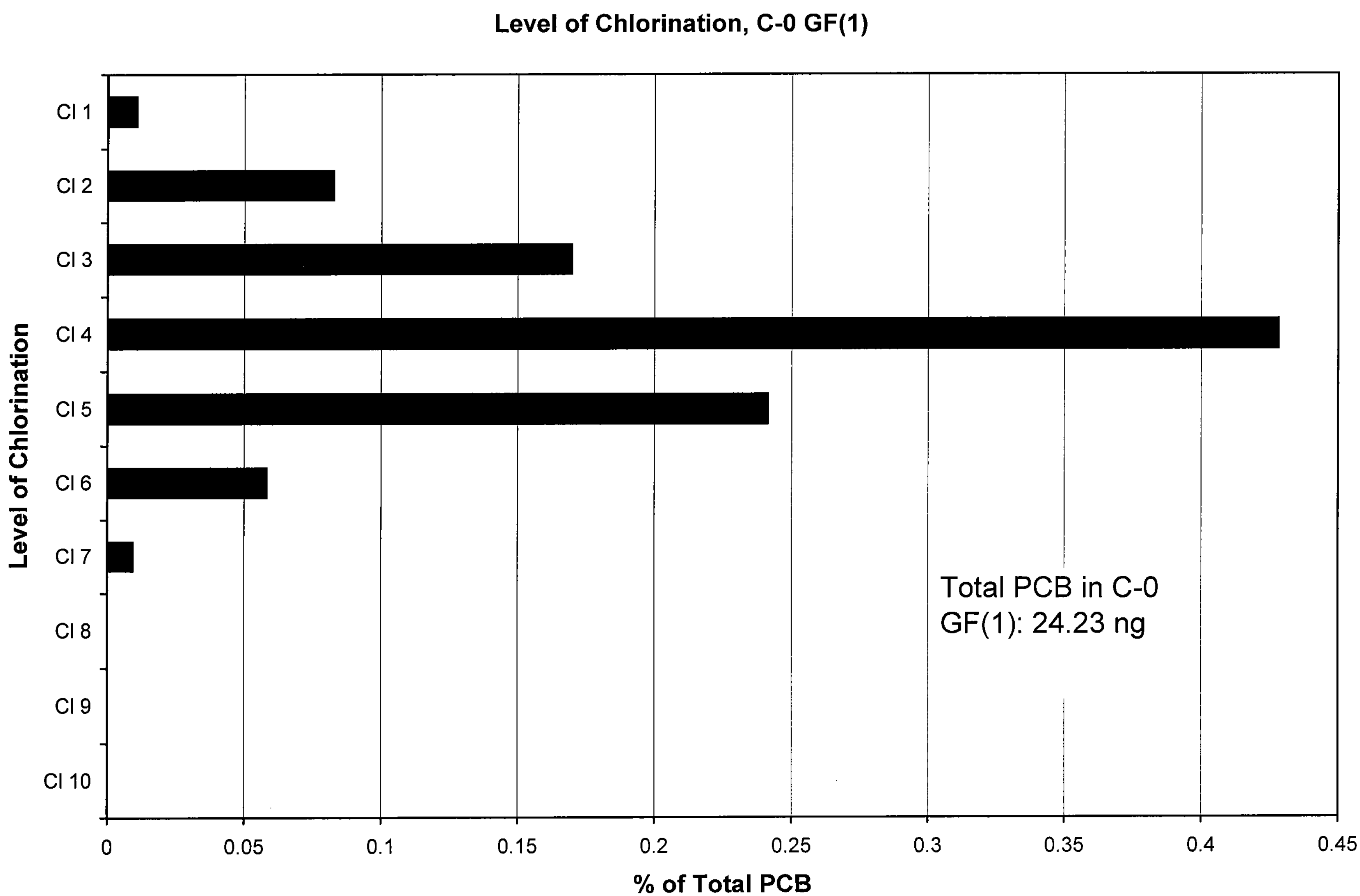


Aroclor-1262
Normalized Concentration (% of Total PCB)
0
2
4
6
8
10
12
14
PCB1
PCB4/10
PCB7/9
PCB12/13
PCB17
PCB19
PCB22
PCB25
PCB28
PCB31
PCB40
PCB42
PCB44
PCB46
PCB48
PCB51
PCB53
PCB59
PCB66
PCB74
PCB83
PCB85
PCB89
PCB92
PCB97
PCB100
PCB105
PCB110
PCB118
PCB124
PCB129
PCB131
PCB134
PCB136
PCB138/160/163
PCB146
PCB151
PCB156
PCB167
PCB170/190
PCB172
PCB174
PCB176
PCB178
PCB183
PCB185
PCB189
PCB193
PCB195
PCB198
PCB200
PCB203/196
PCB206
PCB209
PCB Congeners

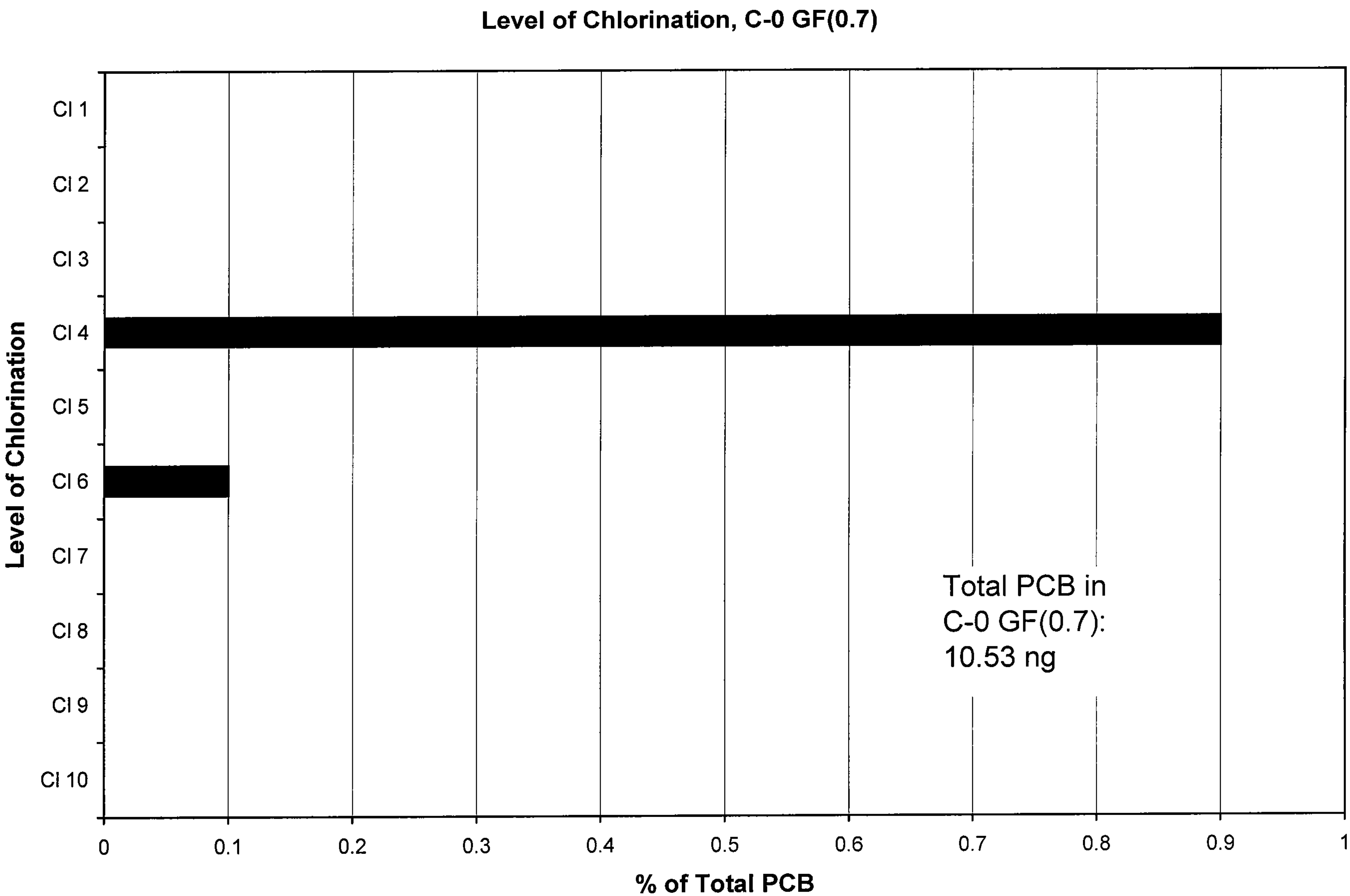

Aroclor-1268
Normalized Concentration (% of Total PCB)
45
40
35
30
25
20
15
10
5
0
PCB1
PCB4/10
PCB7/9
PCB12/13
PCB17
PCB19
PCB22
PCB25
PCB28
PCB31
PCB40
PCB42
PCB44
PCB46
PCB48
PCB51
PCB53
PCB59
PCB66
PCB74
PCB83
PCB85
PCB89
PCB92
PCB97
PCB100
PCB105
PCB110
PCB118
PCB124
PCB129
PCB131
PCB134
PCB136
PCB138/160/163
PCB146
PCB151
PCB156
PCB167
PCB170/190
PCB172
PCB174
PCB176
PCB178
PCB183
PCB185
PCB189
PCB193
PCB195
PCB198
PCB200
PCB203/196
PCB206
PCB209
PCB Congeners

APPENDIX G

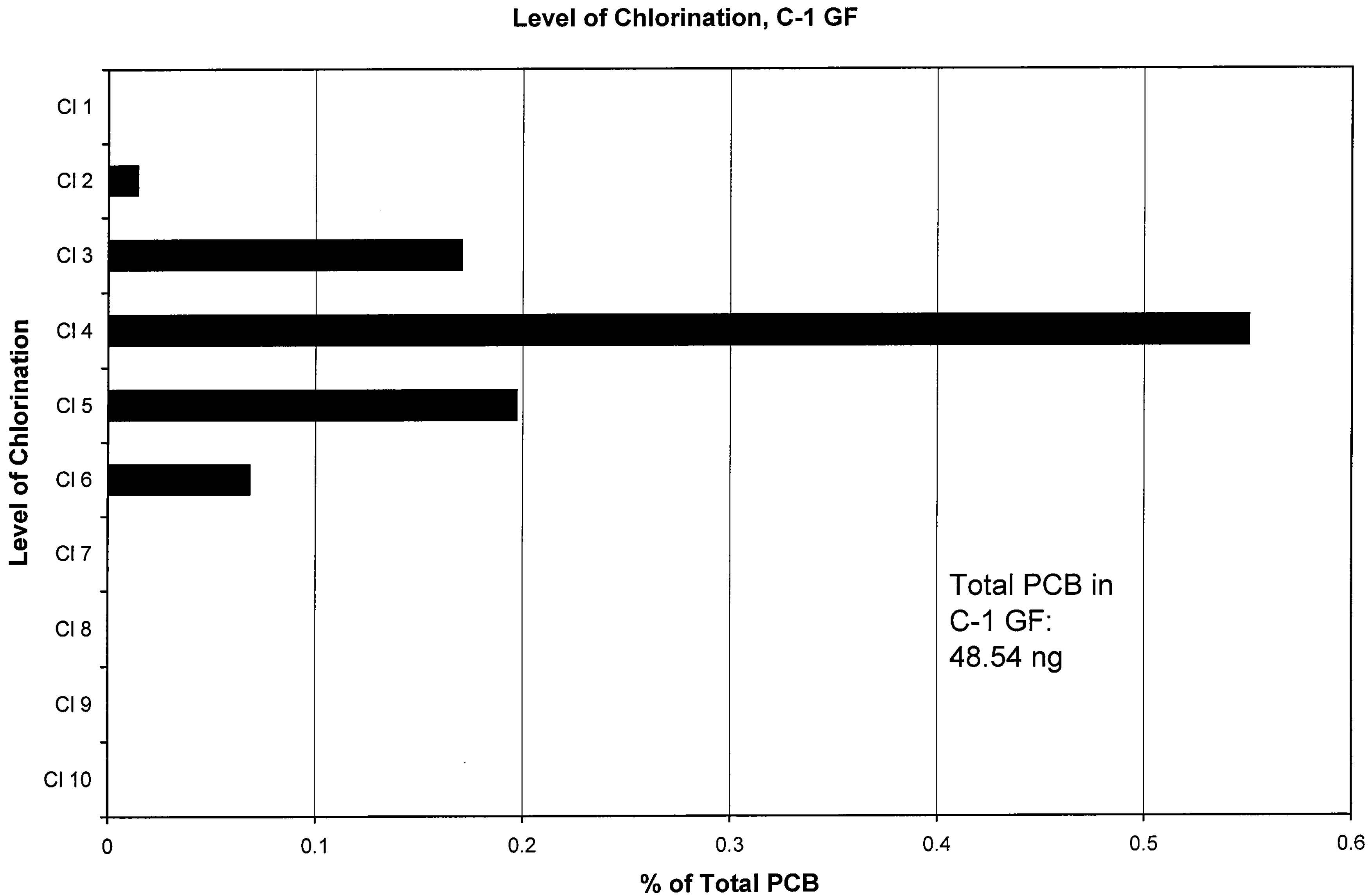
PCB COMPOSITION PLOTS FOR PCB HOMOLOGUES FOR ALL SEDIMENT SAMPLES AND NINE AROCLOR FORMULATIONS

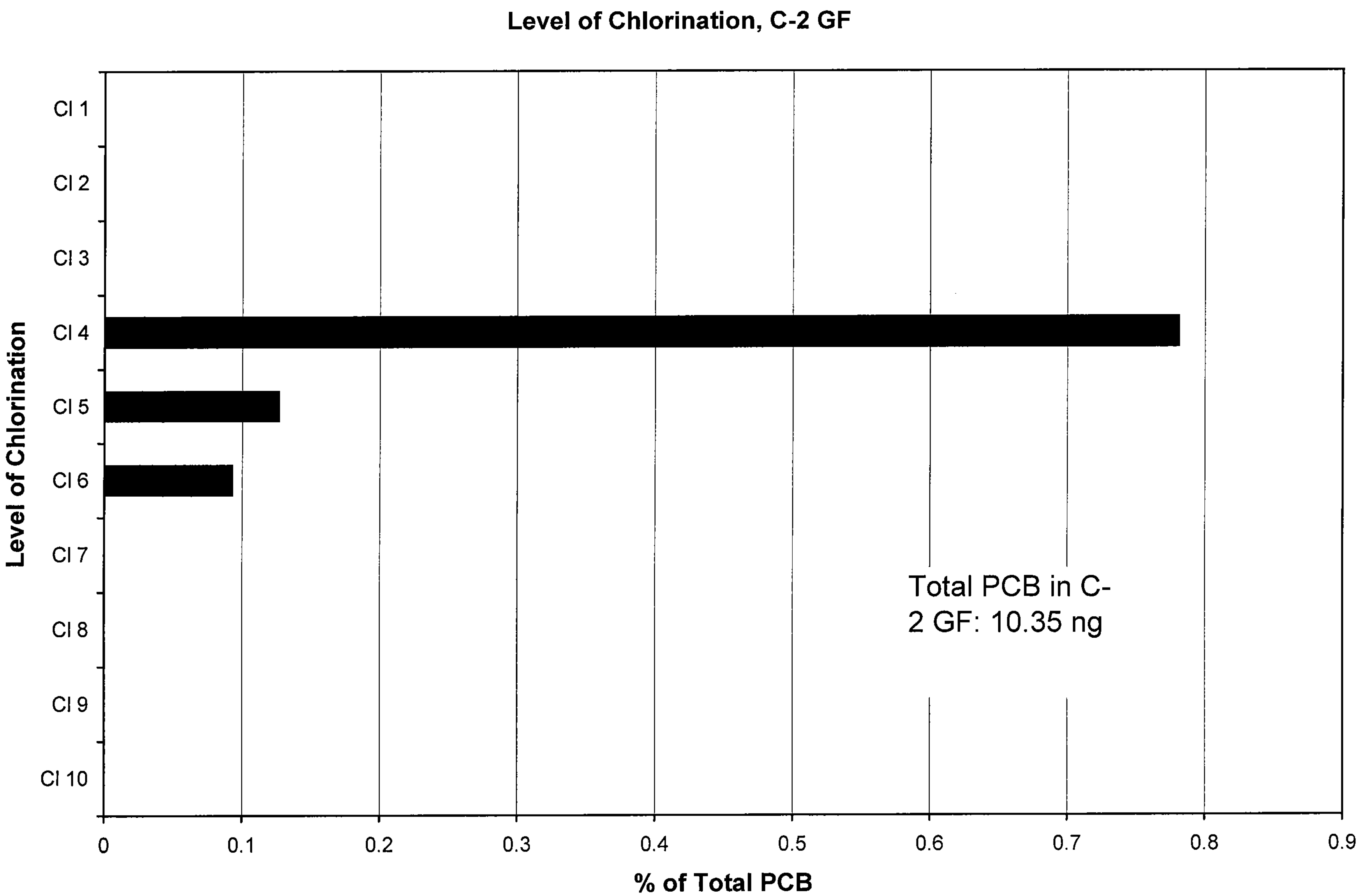


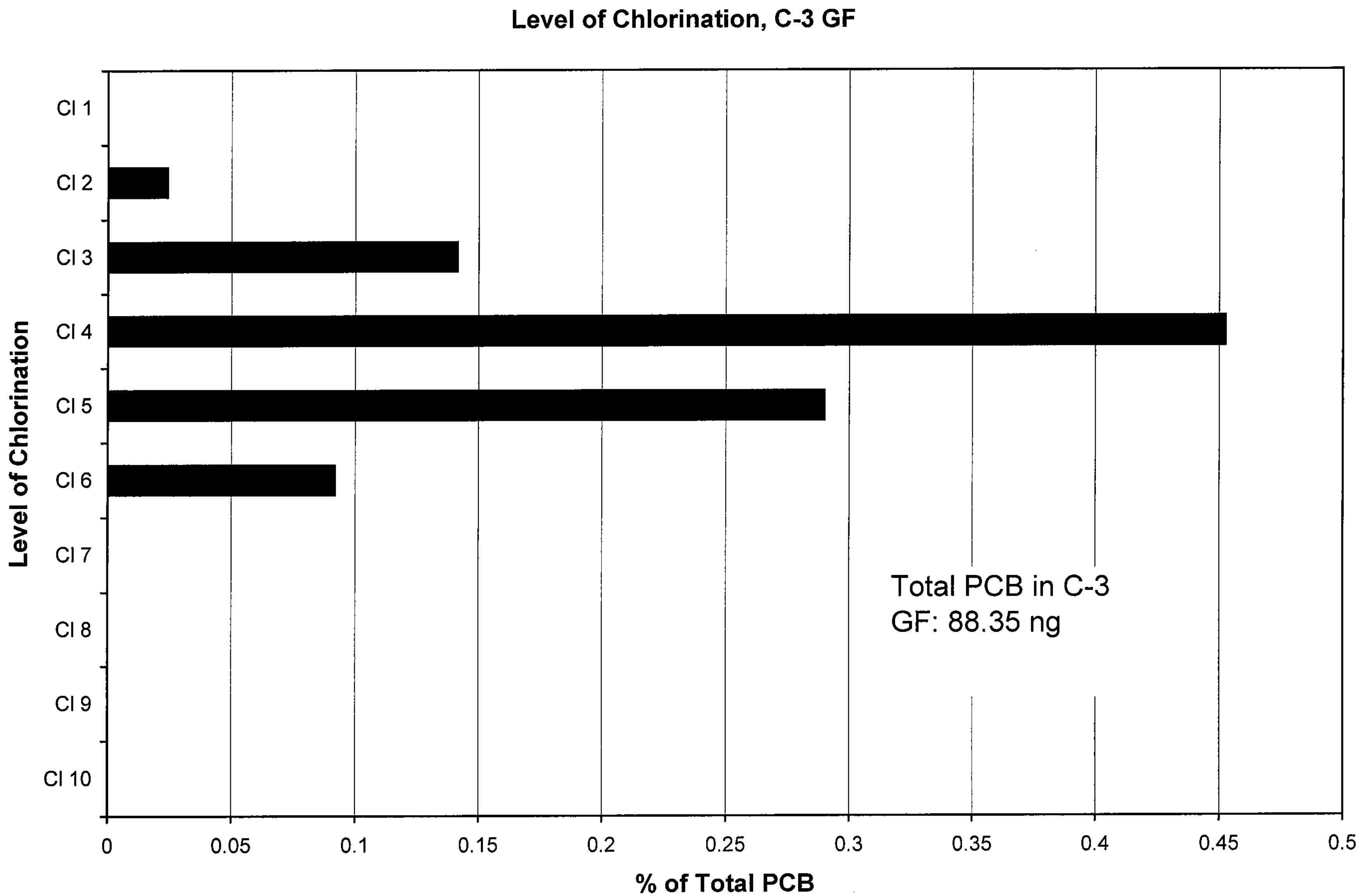
Level of Chlorination, C-0 GF(1)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
% of Total PCB
Total PCB in C-0 GF(1): 24.23 ng

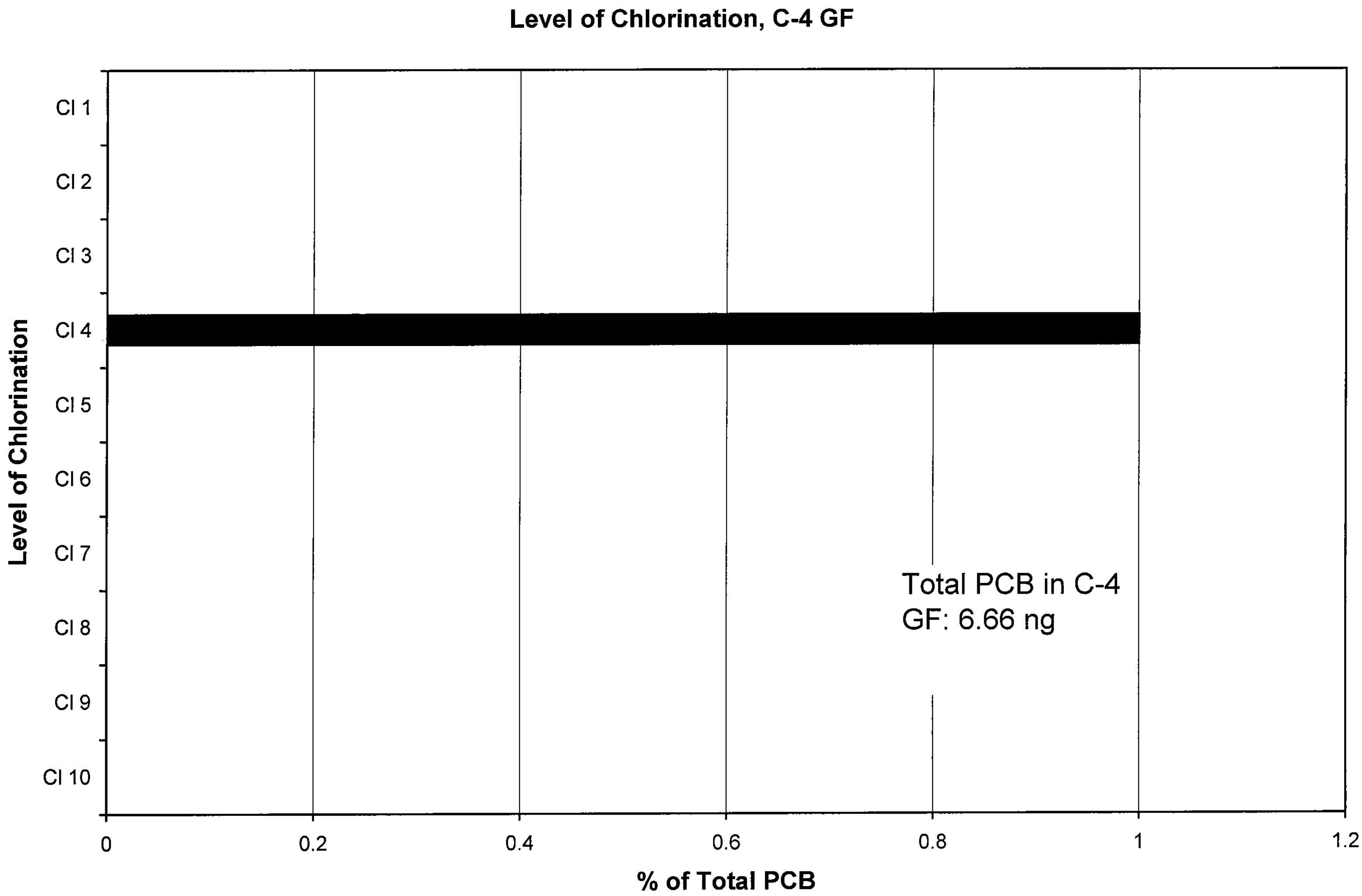


Level of Chlorination, C-0 GF(0.7)
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Level of Chlorination
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
% of Total PCB
Total PCB in
C-0 GF(0.7):
10.53 ng

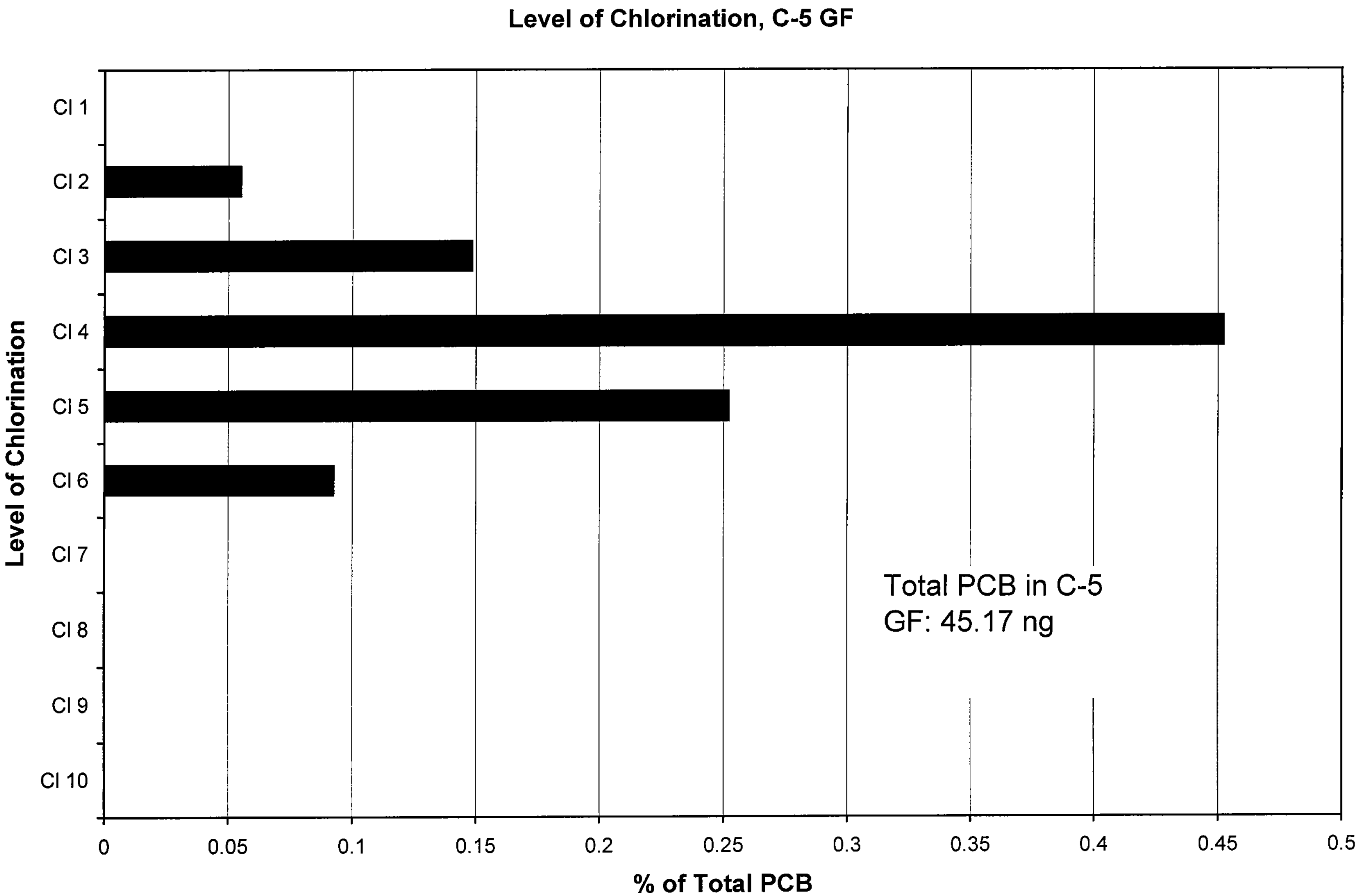

Level of Chlorination, C-1 GF
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
0.1
0.2
0.3
0.4
0.5
0.6
% of Total PCB
Total PCB in
C-1 GF:
48.54 ng

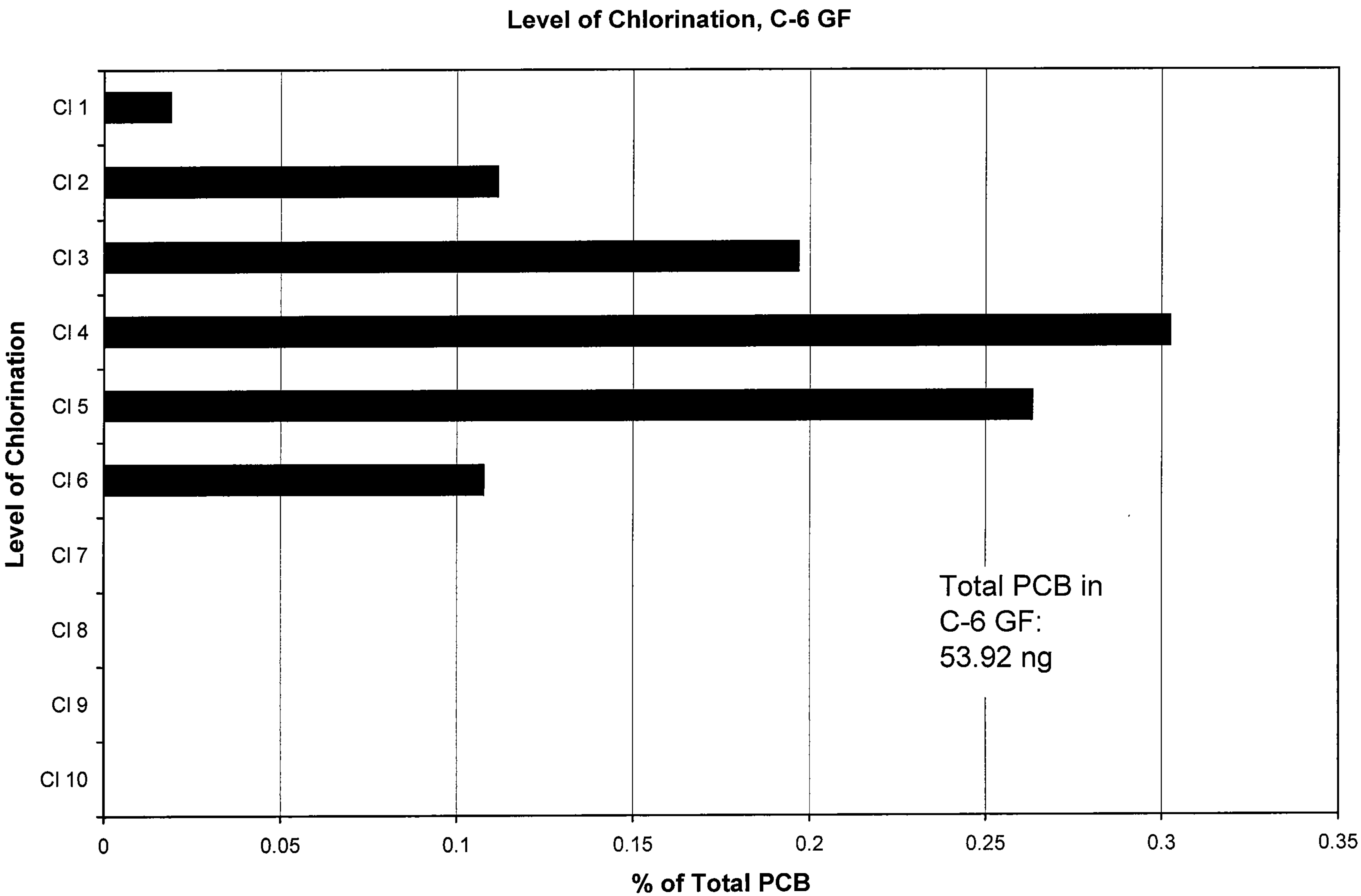

Level of Chlorination, C-2 GF
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
% of Total PCB
Total PCB in C-2 GF: 10.35 ng

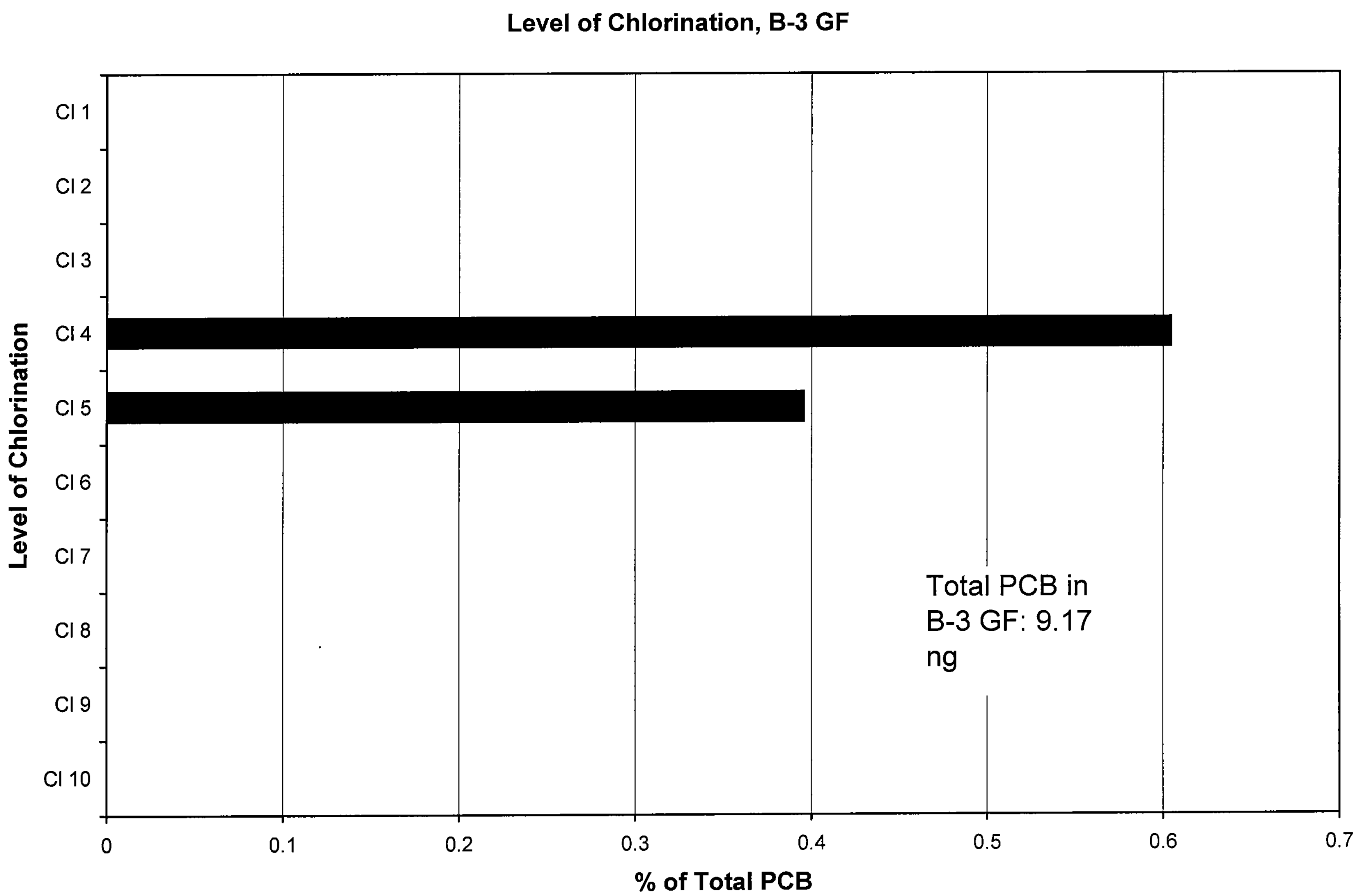

Level of Chlorination, C-3 GF
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
% of Total PCB
Total PCB in C-3
GF: 88.35 ng

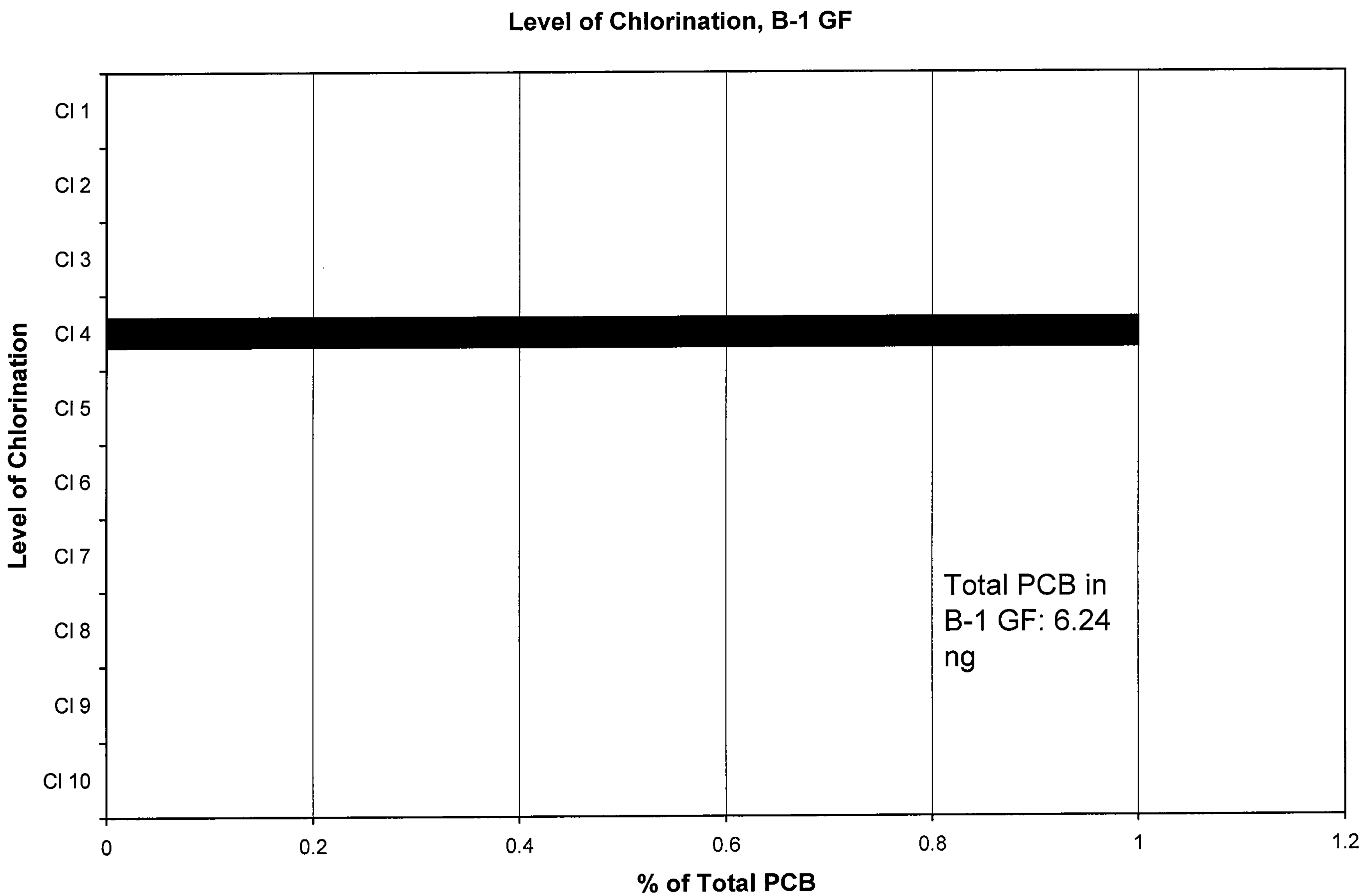


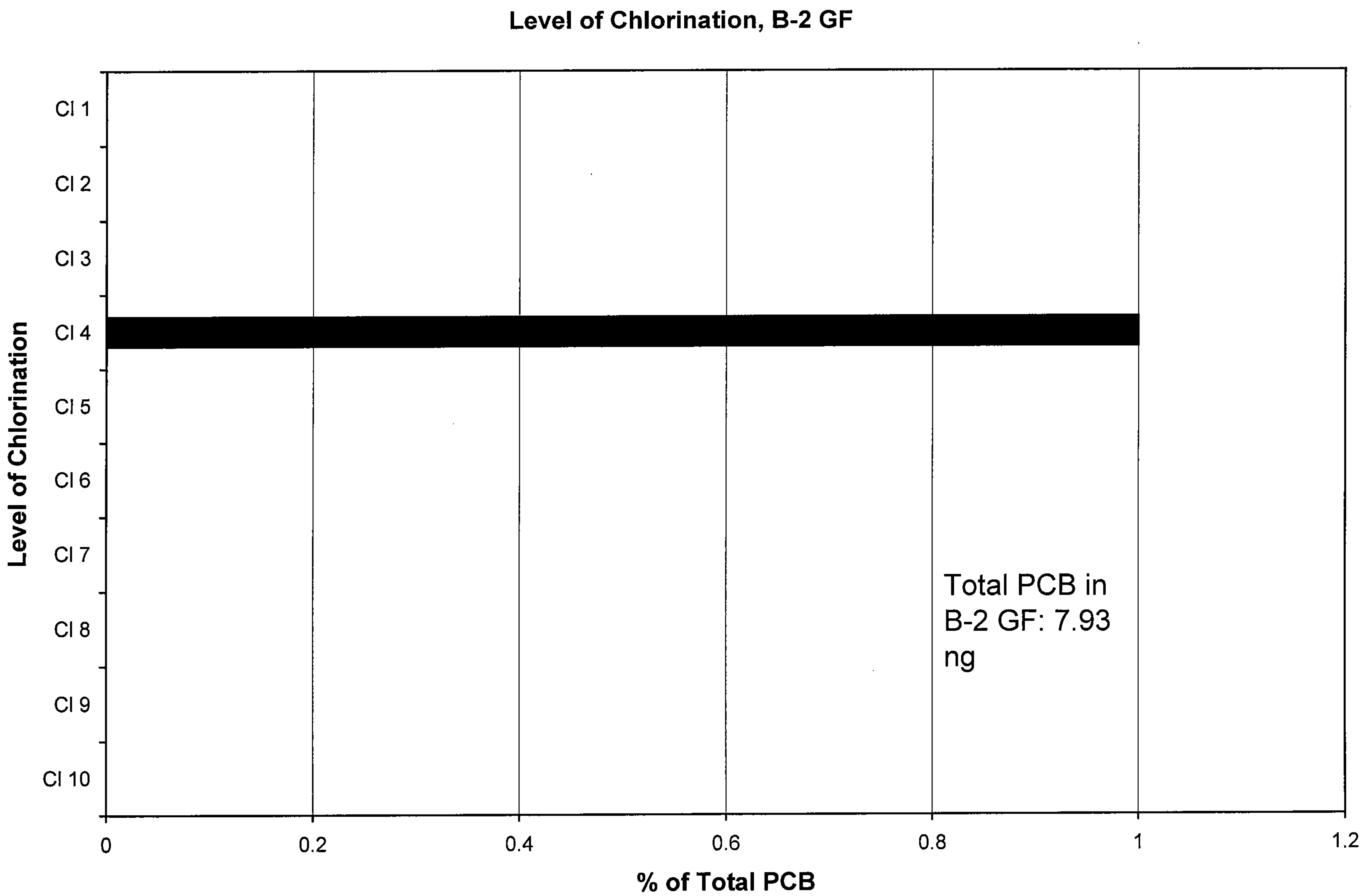
Level of Chlorination, C-4 GF
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
0.2
0.4
0.6
0.8
1
1.2
% of Total PCB
Total PCB in C-4 GF: 6.66 ng


Level of Chlorination, C-5 GF
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
% of Total PCB
Total PCB in C-5
GF: 45.17 ng

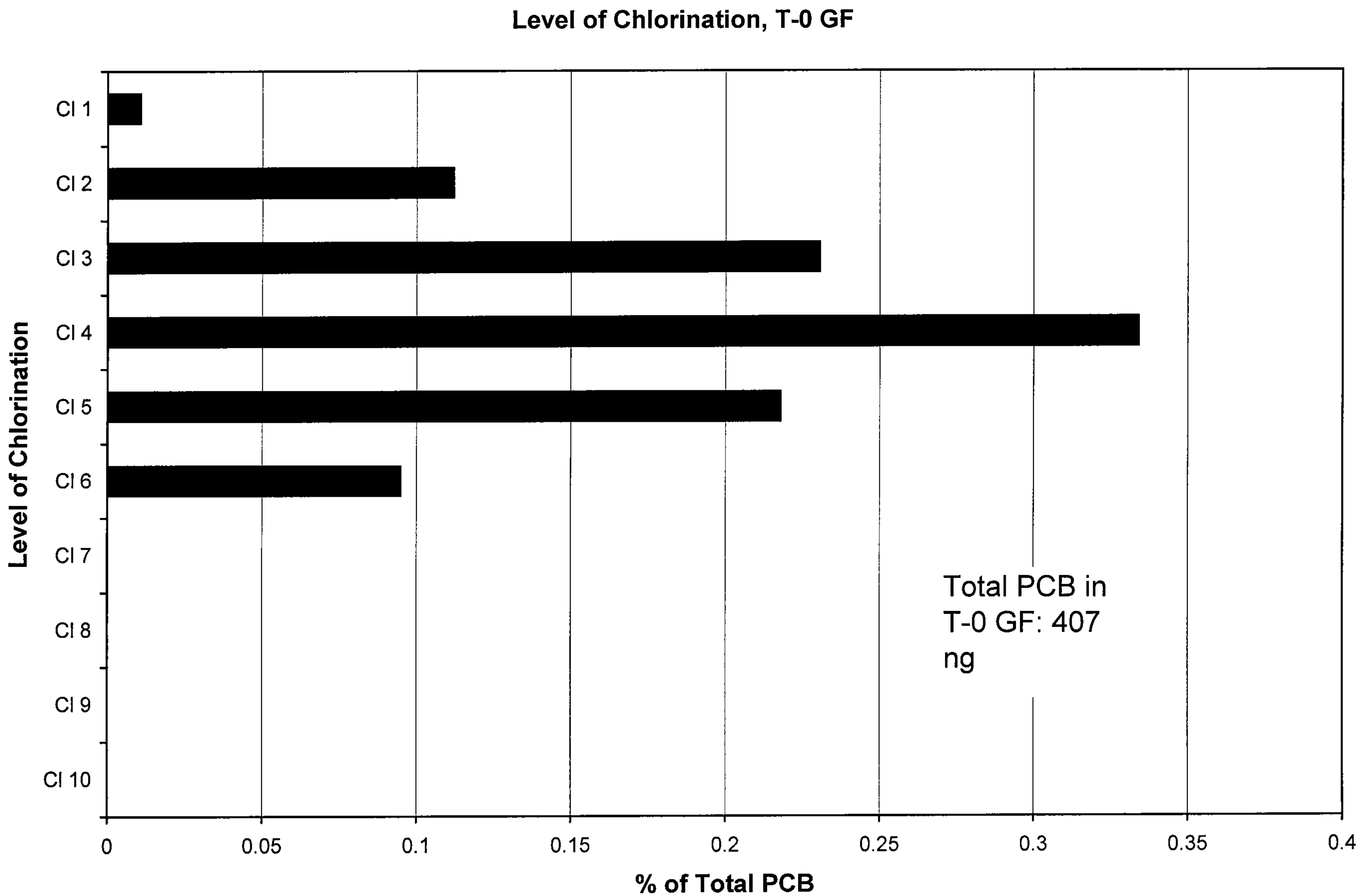

Level of Chlorination, C-6 GF
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
% of Total PCB
Total PCB in C-6 GF: 53.92 ng

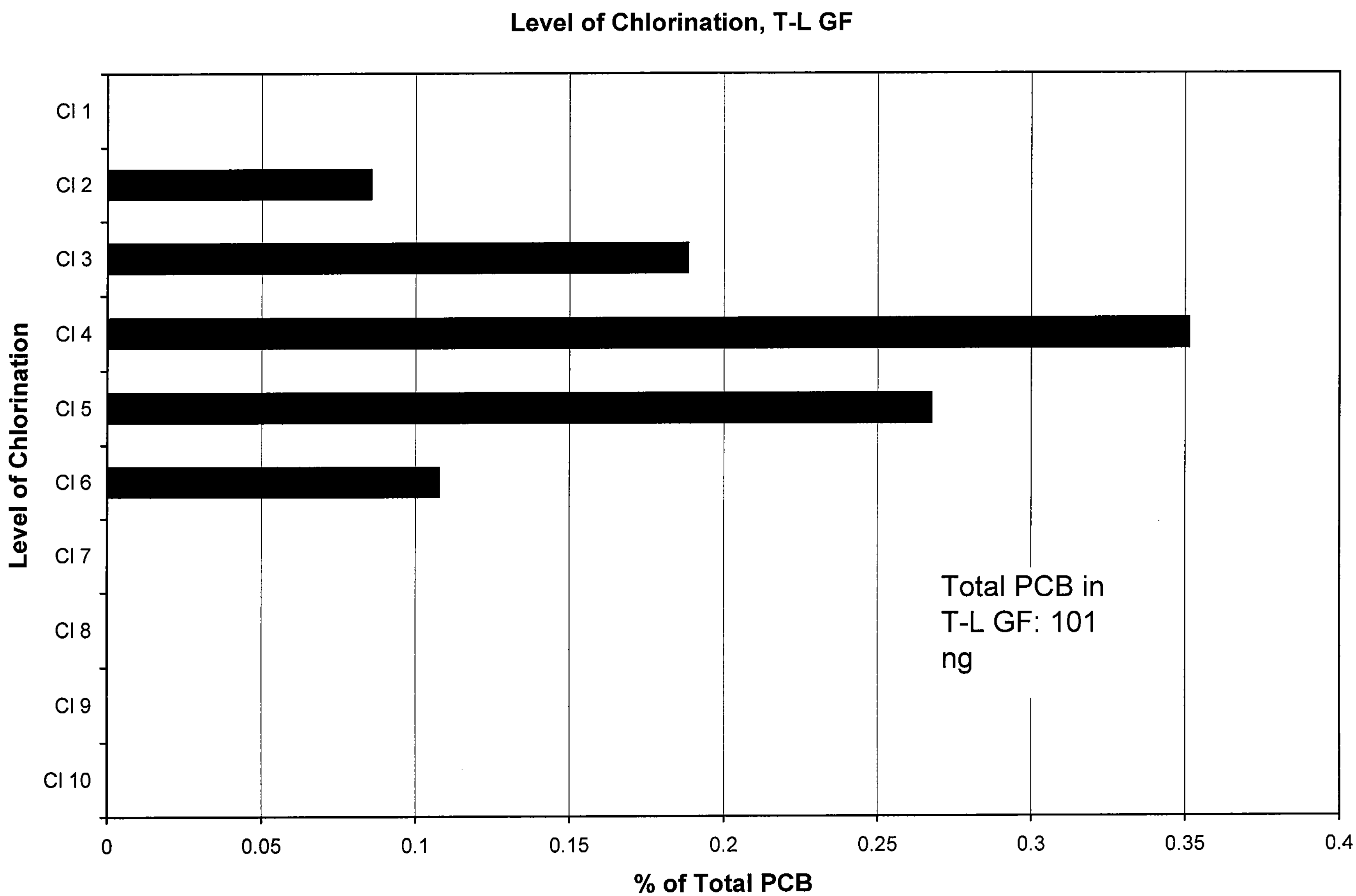

Level of Chlorination, B-3 GF
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
% of Total PCB
Total PCB in B-3 GF: 9.17 ng


Level of Chlorination, B-1 GF
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
0.2
0.4
0.6
0.8
1
1.2
% of Total PCB
Total PCB in B-1 GF: 6.24 ng

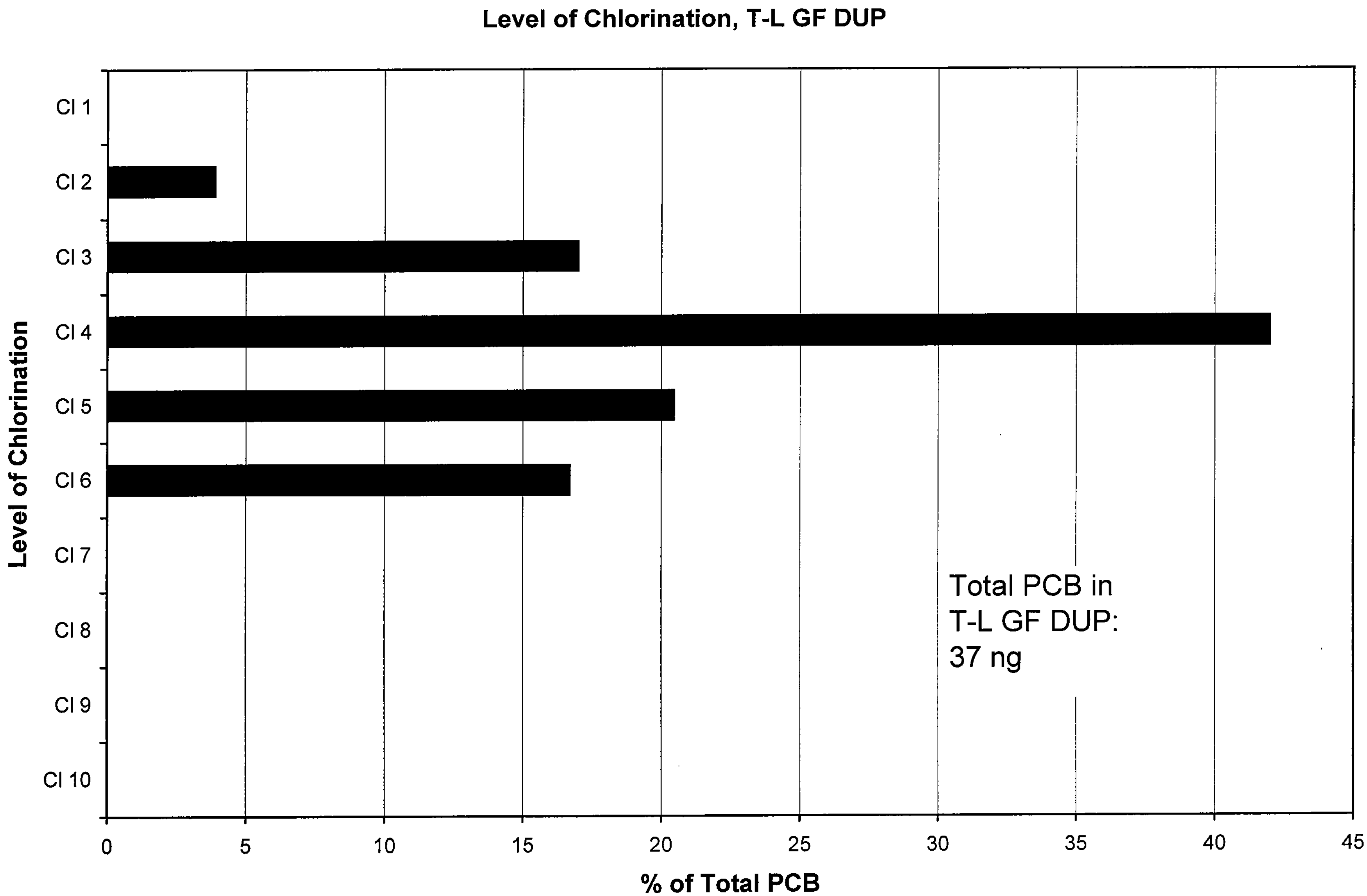


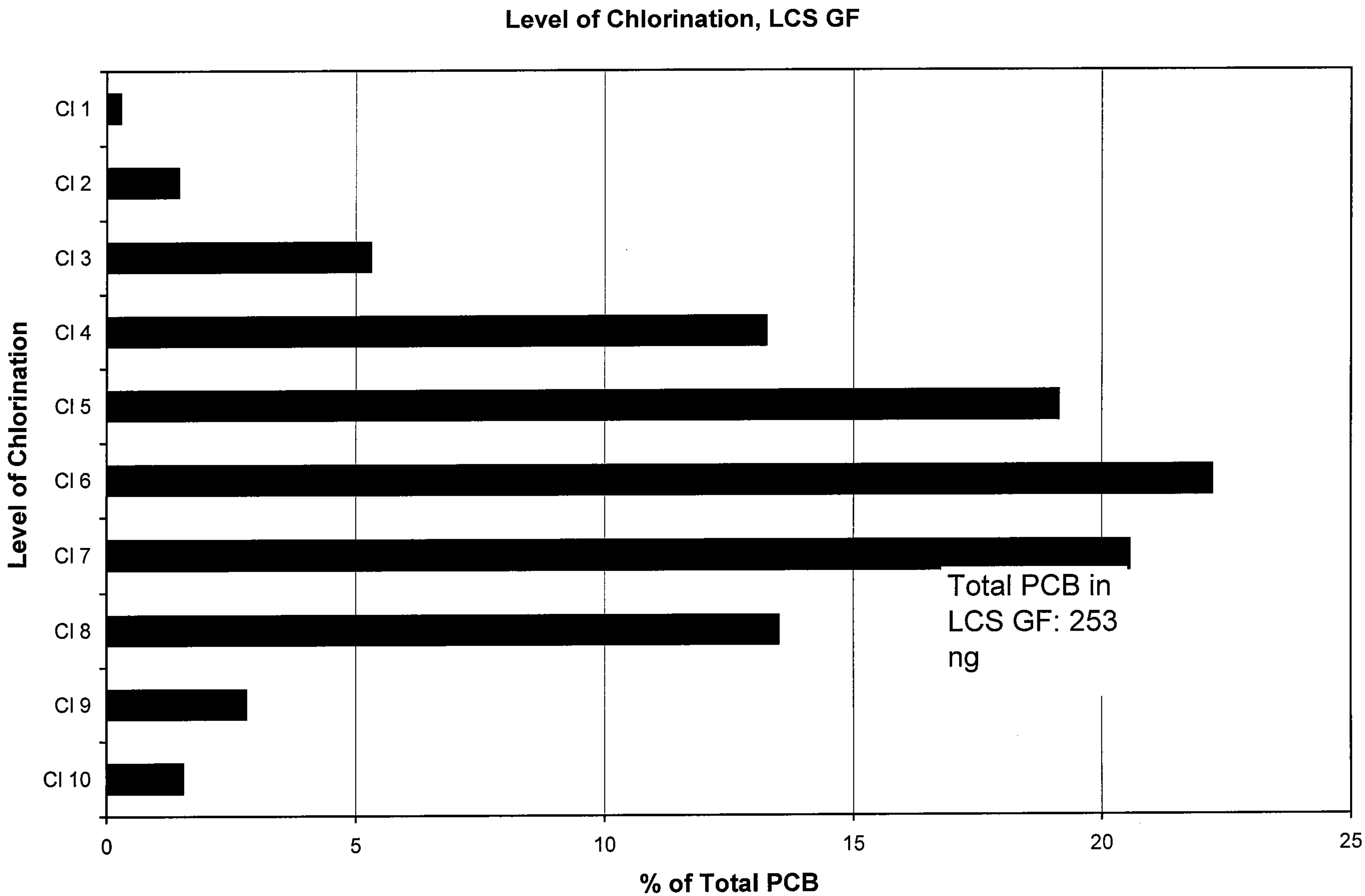
Level of Chlorination, B-2 GF
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
0.2
0.4
0.6
0.8
1
1.2
% of Total PCB
Total PCB in B-2 GF: 7.93 ng


Level of Chlorination, T-0 GF
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Total PCB in T-0 GF: 407 ng
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
% of Total PCB

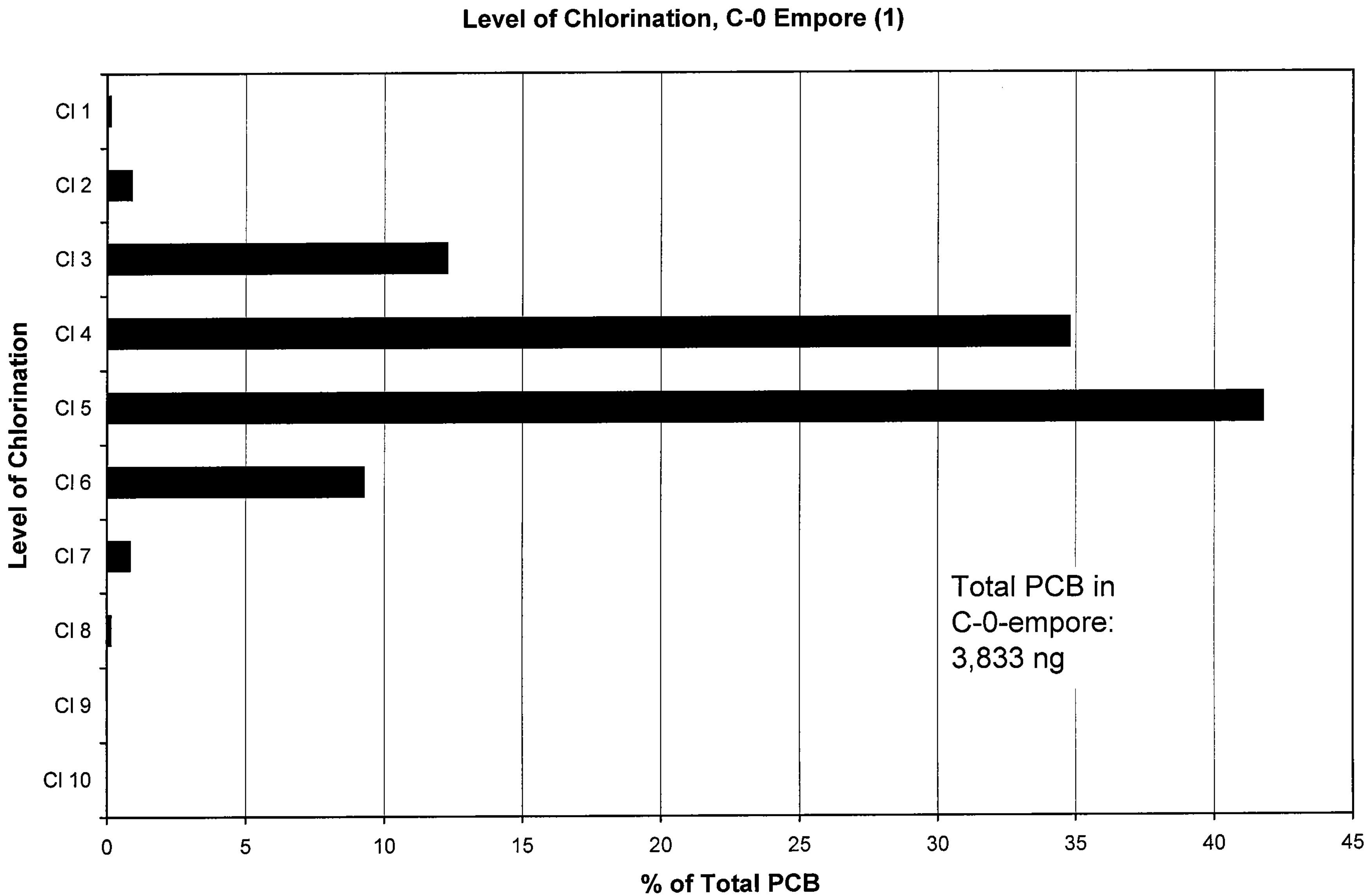


Level of Chlorination, T-L GF
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
% of Total PCB
Total PCB in T-L GF: 101 ng


Level of Chlorination, T-L GF DUP
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
T-L GF DUP:
37 ng

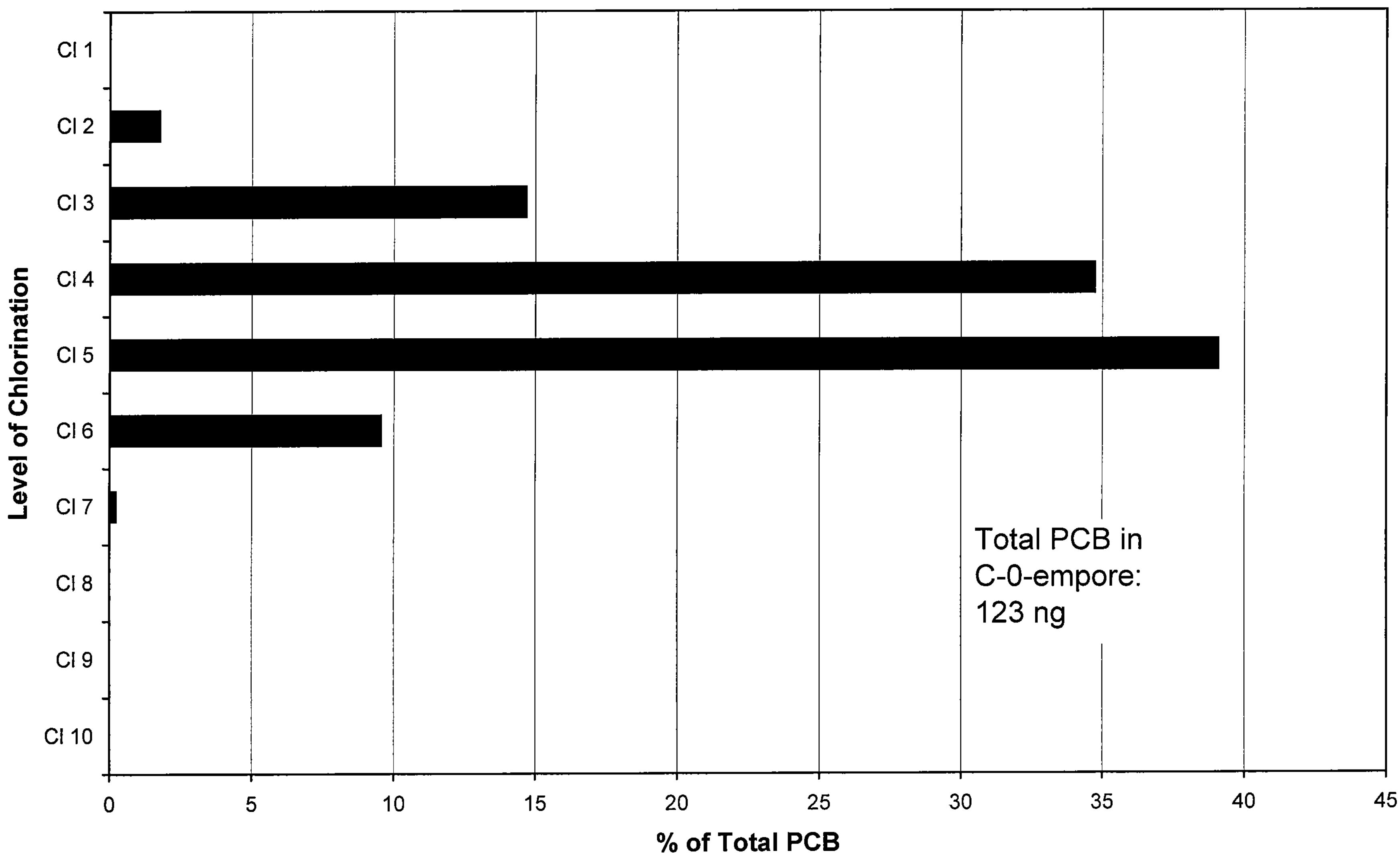


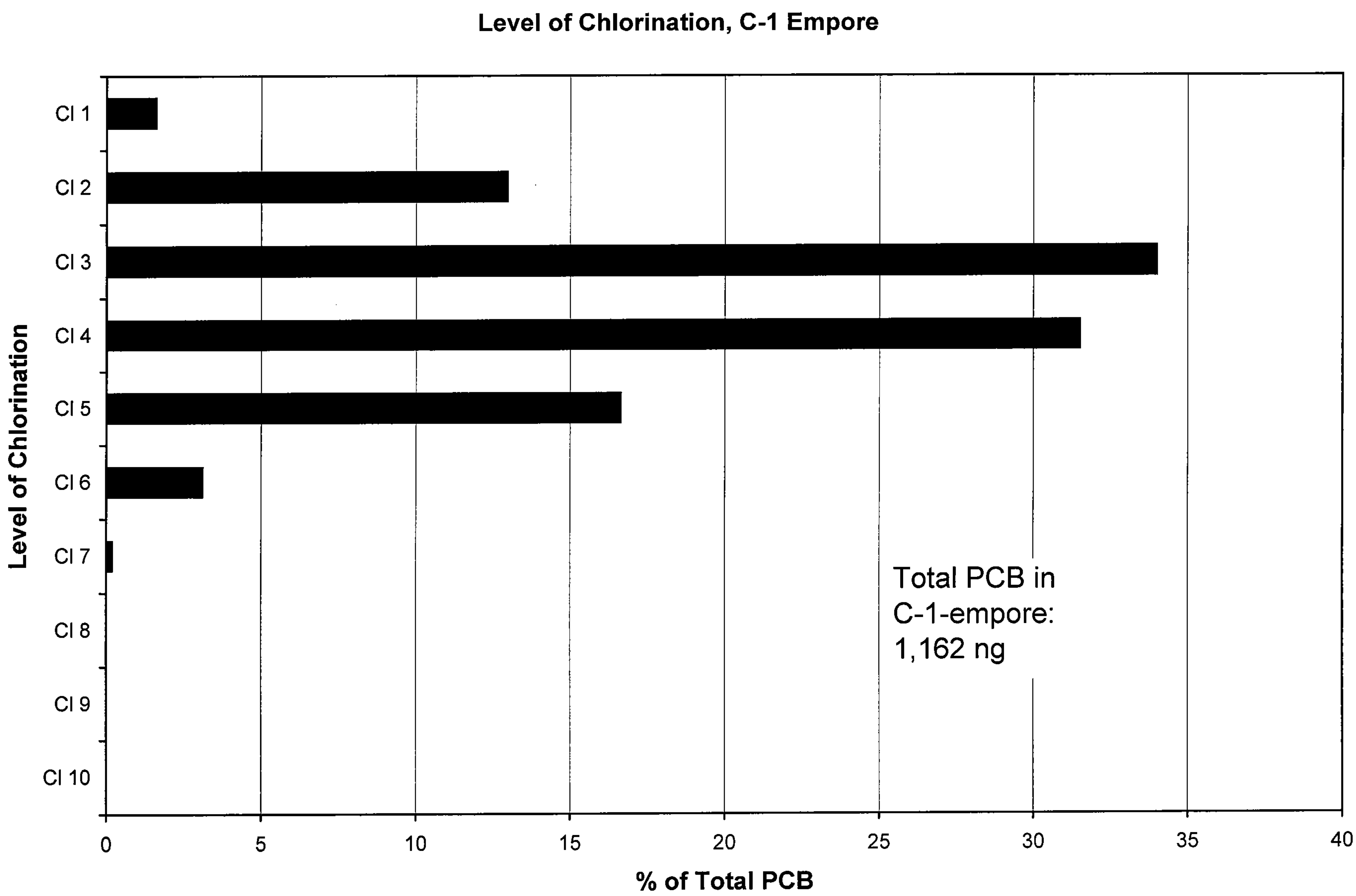
Level of Chlorination, LCS GF
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Total PCB in LCS GF: 253 ng
0
5
10
15
20
25
% of Total PCB

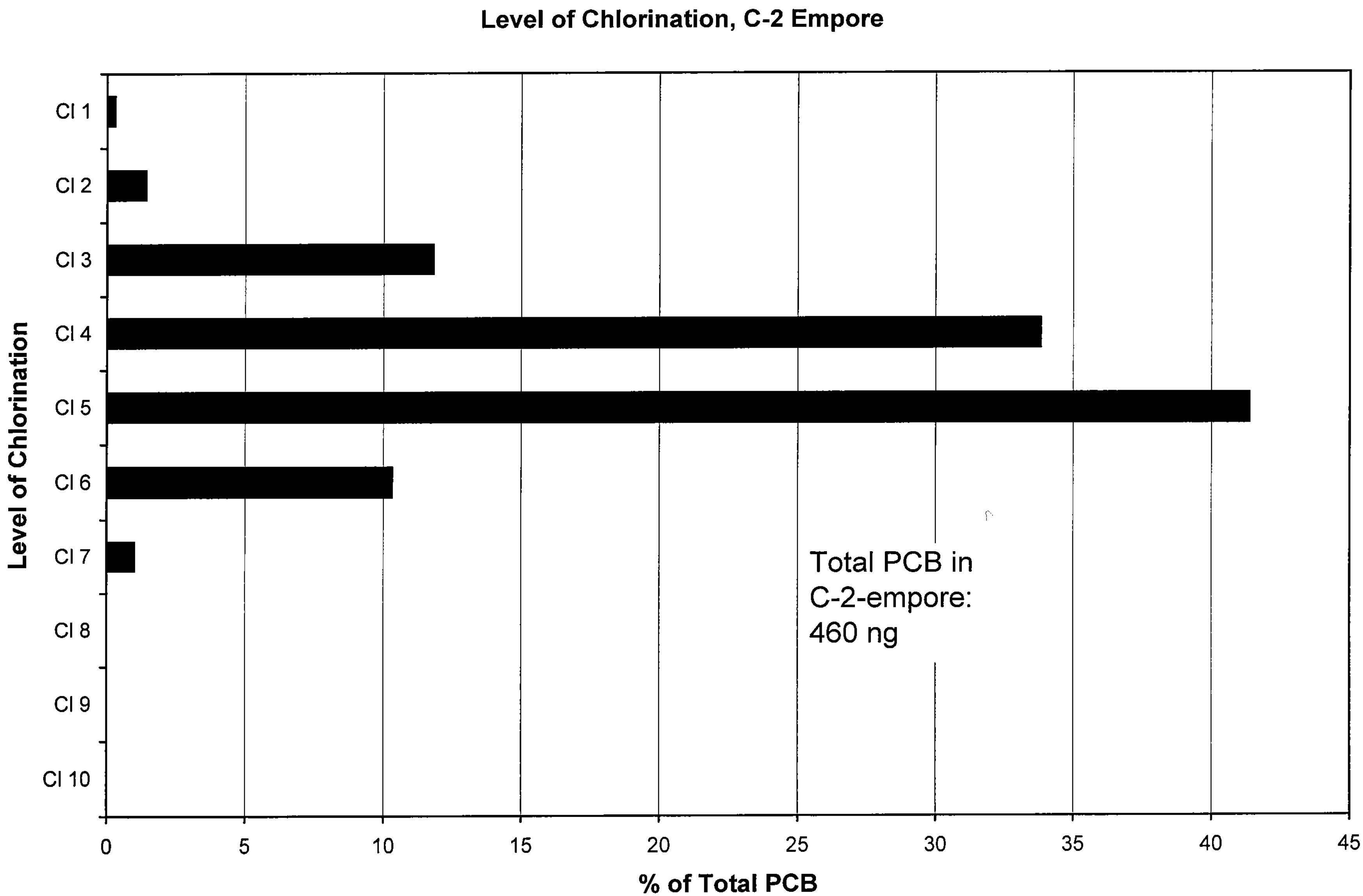


Level of Chlorination, C-0 Empore (1)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
C-0-empore:
3,833 ng

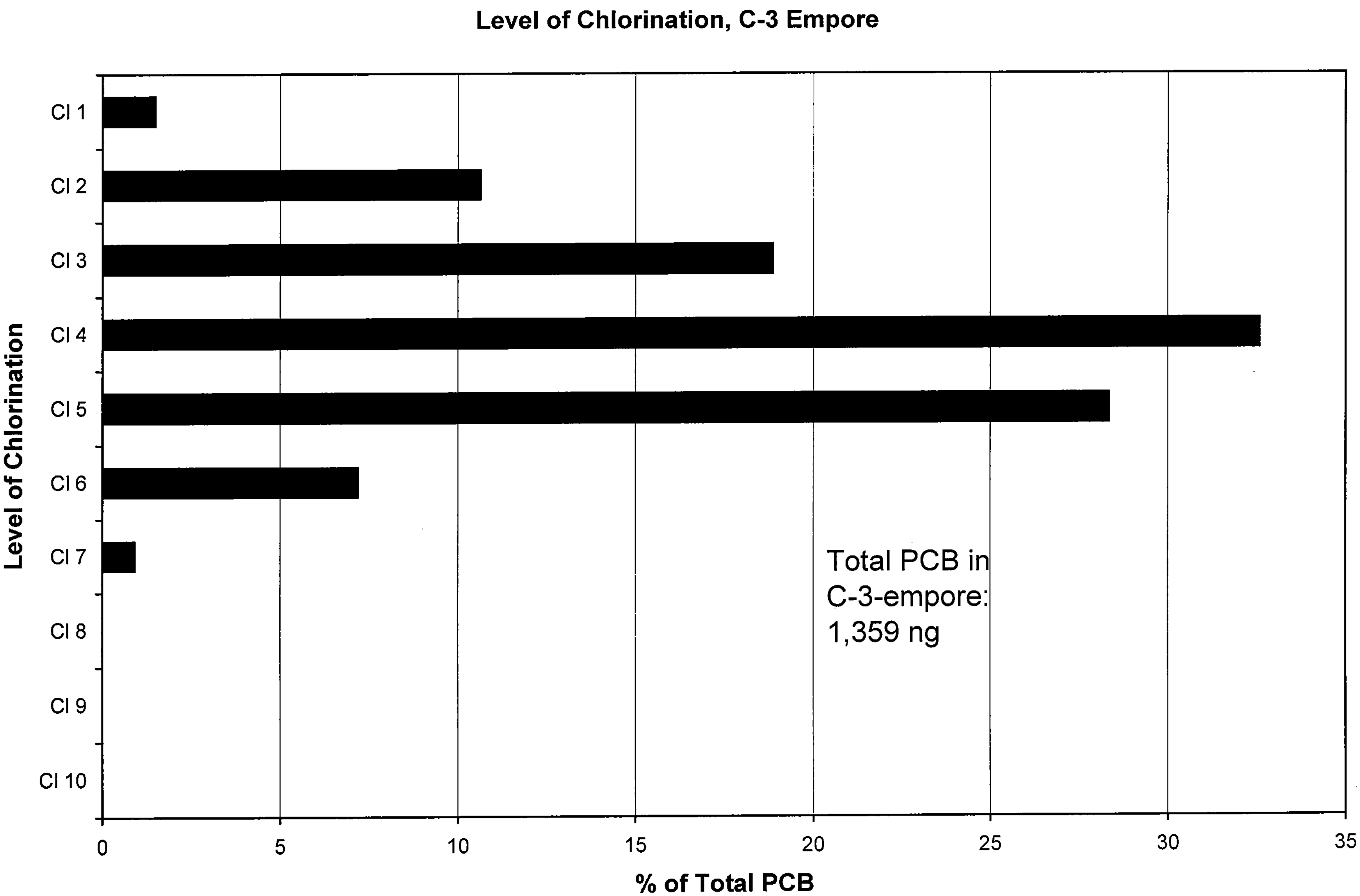
Level of Chlorination, C-0 Empore



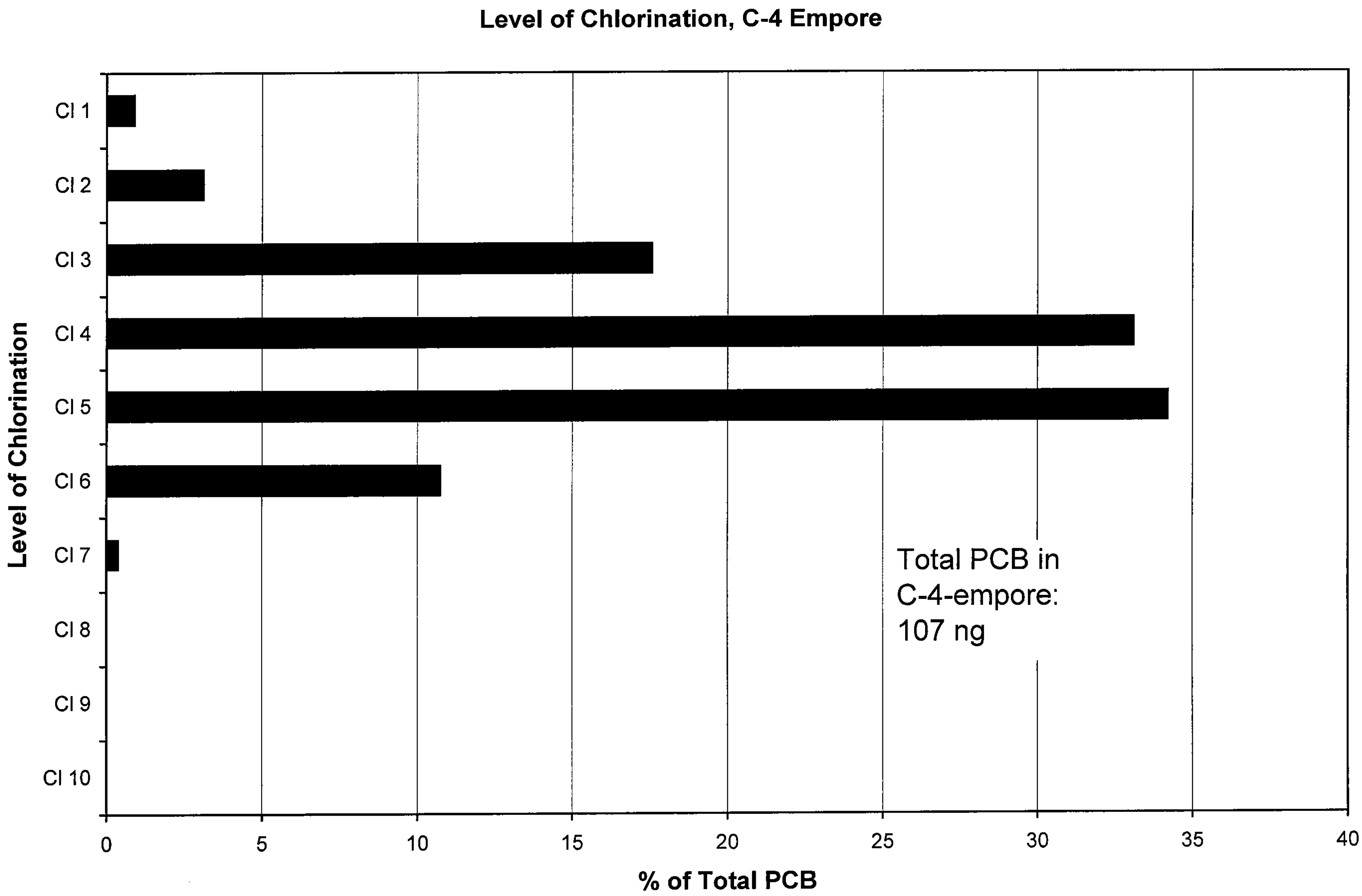

Level of Chlorination, C-1 Empore
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in
C-1-empore:
1,162 ng

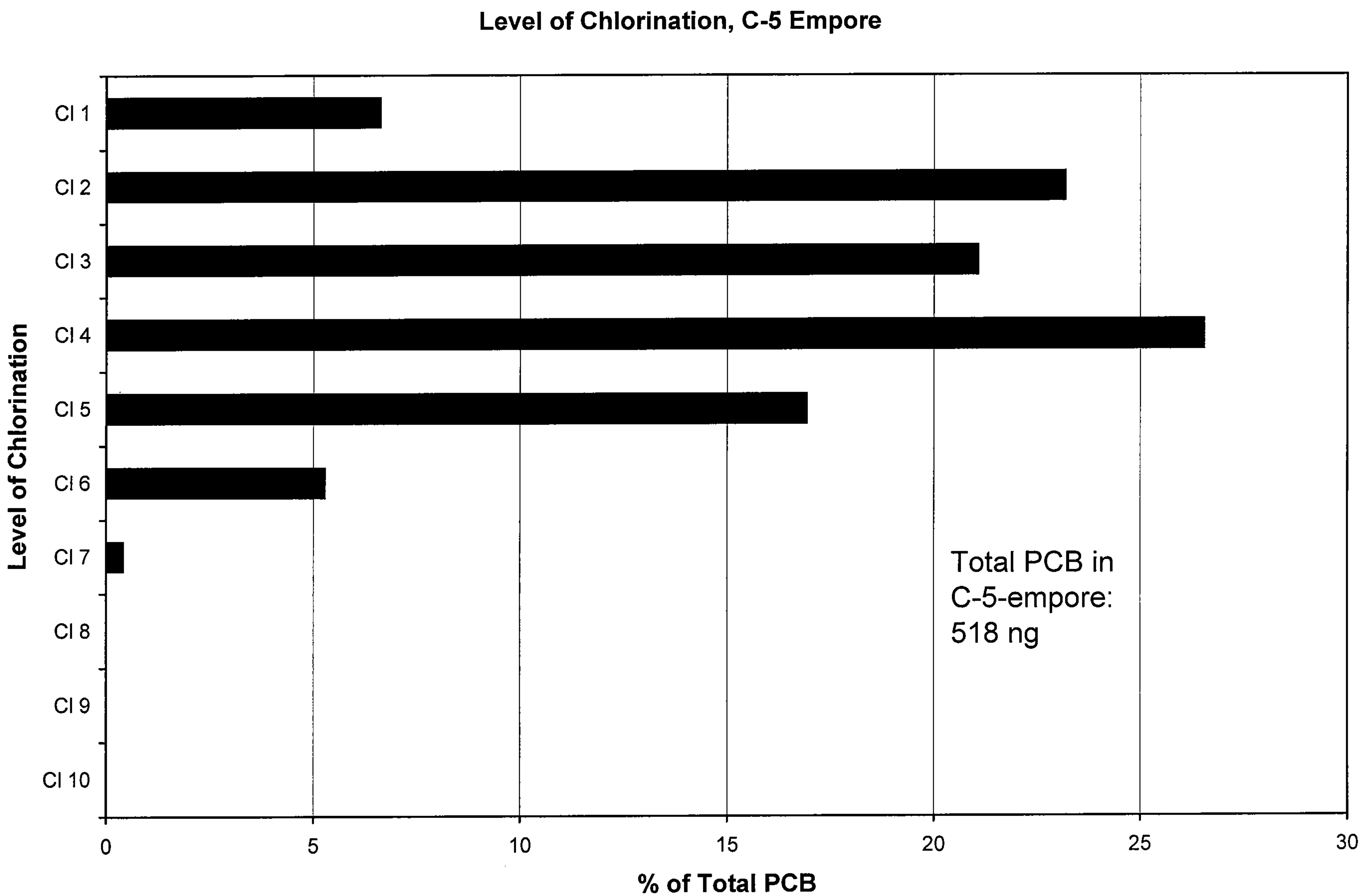


Level of Chlorination, C-2 Empore
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
C-2-empore:
460 ng

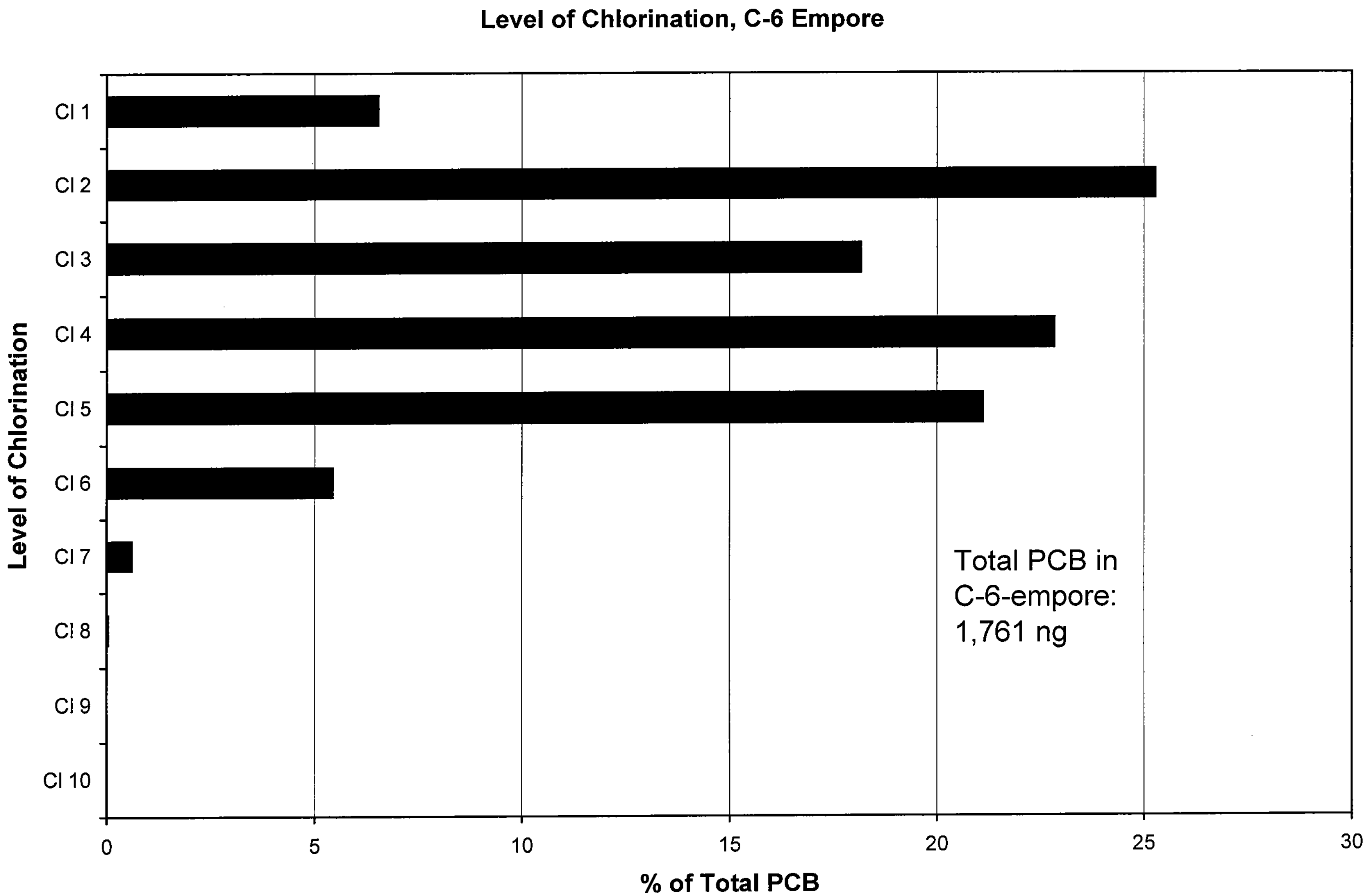


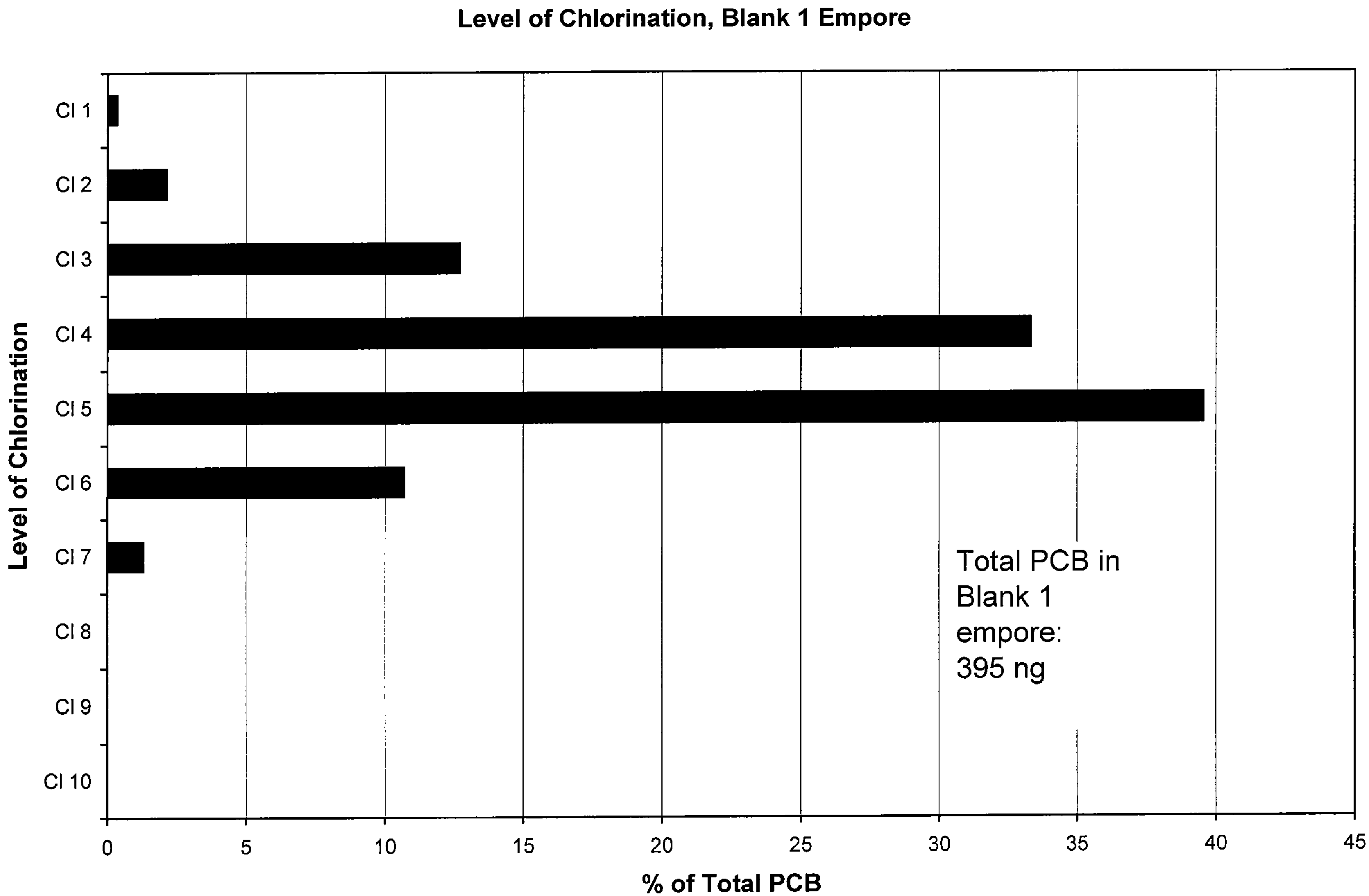
Level of Chlorination, C-3 Empore
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
C-3-empore:
1,359 ng

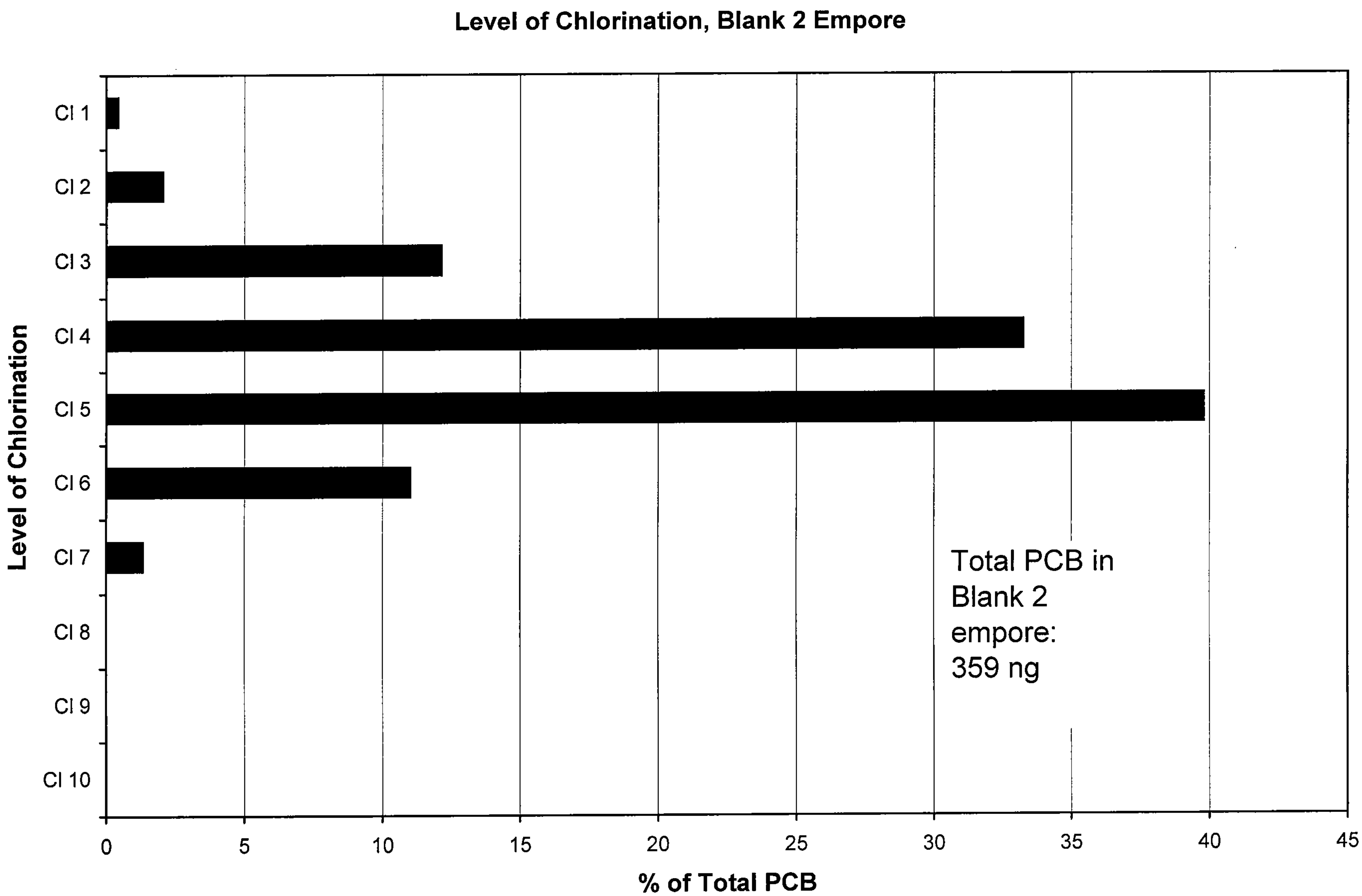

Level of Chlorination, C-4 Empore
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in
C-4-empore:
107 ng

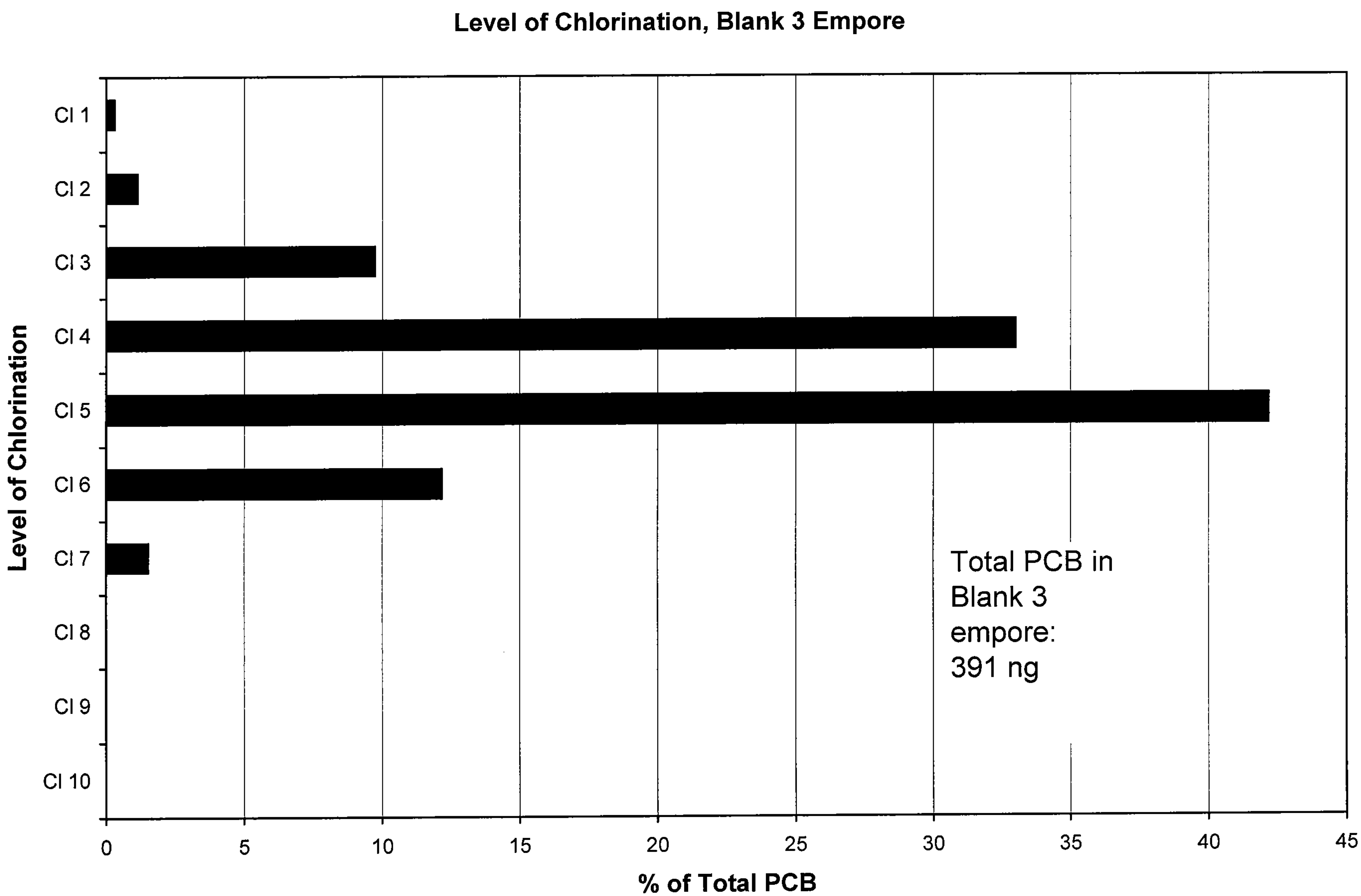


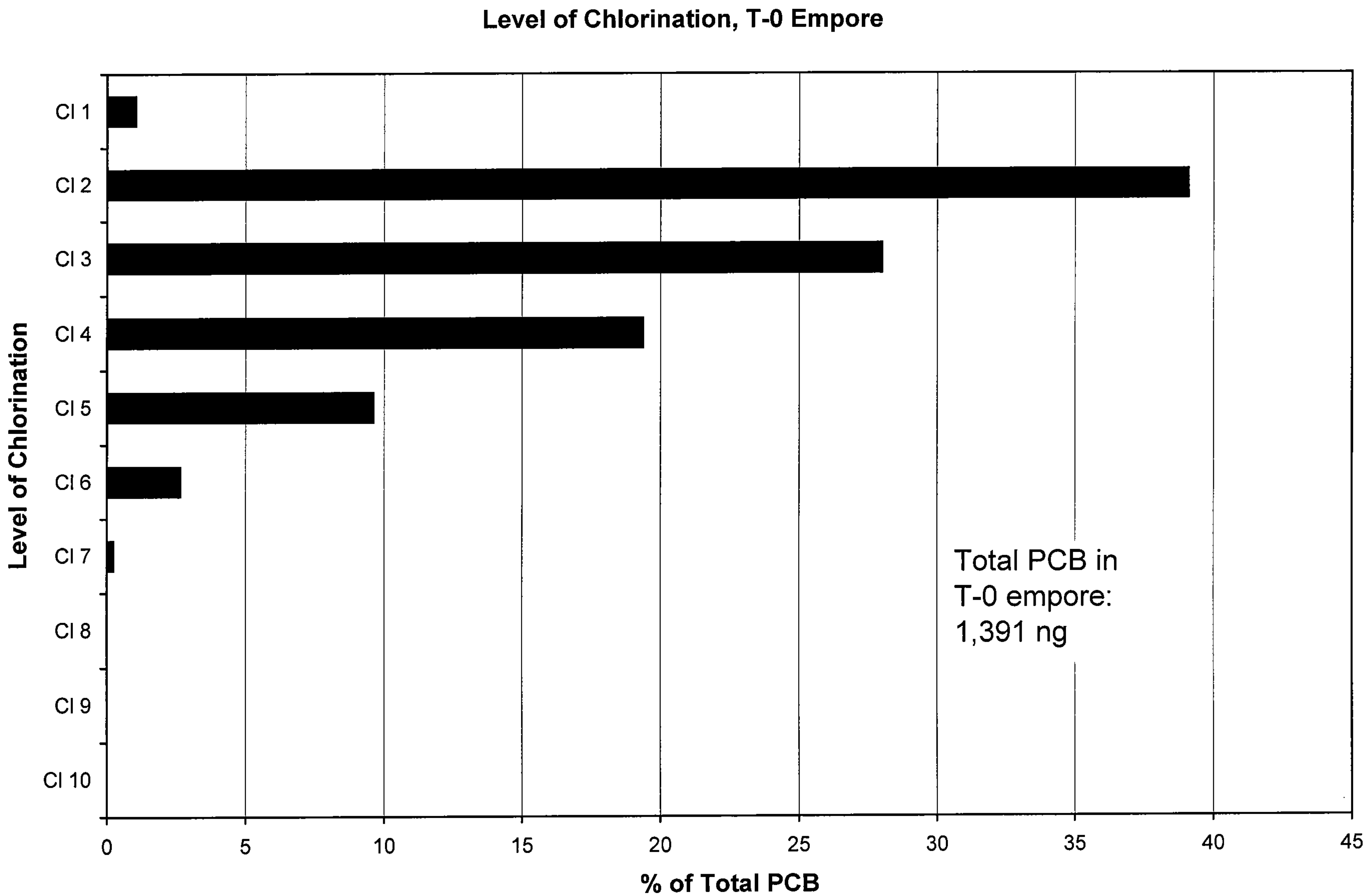
Level of Chlorination, C-5 Empore
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
% of Total PCB
Total PCB in
C-5-empore:
518 ng


Level of Chlorination, C-6 Empore
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
% of Total PCB
Total PCB in
C-6-empore:
1,761 ng

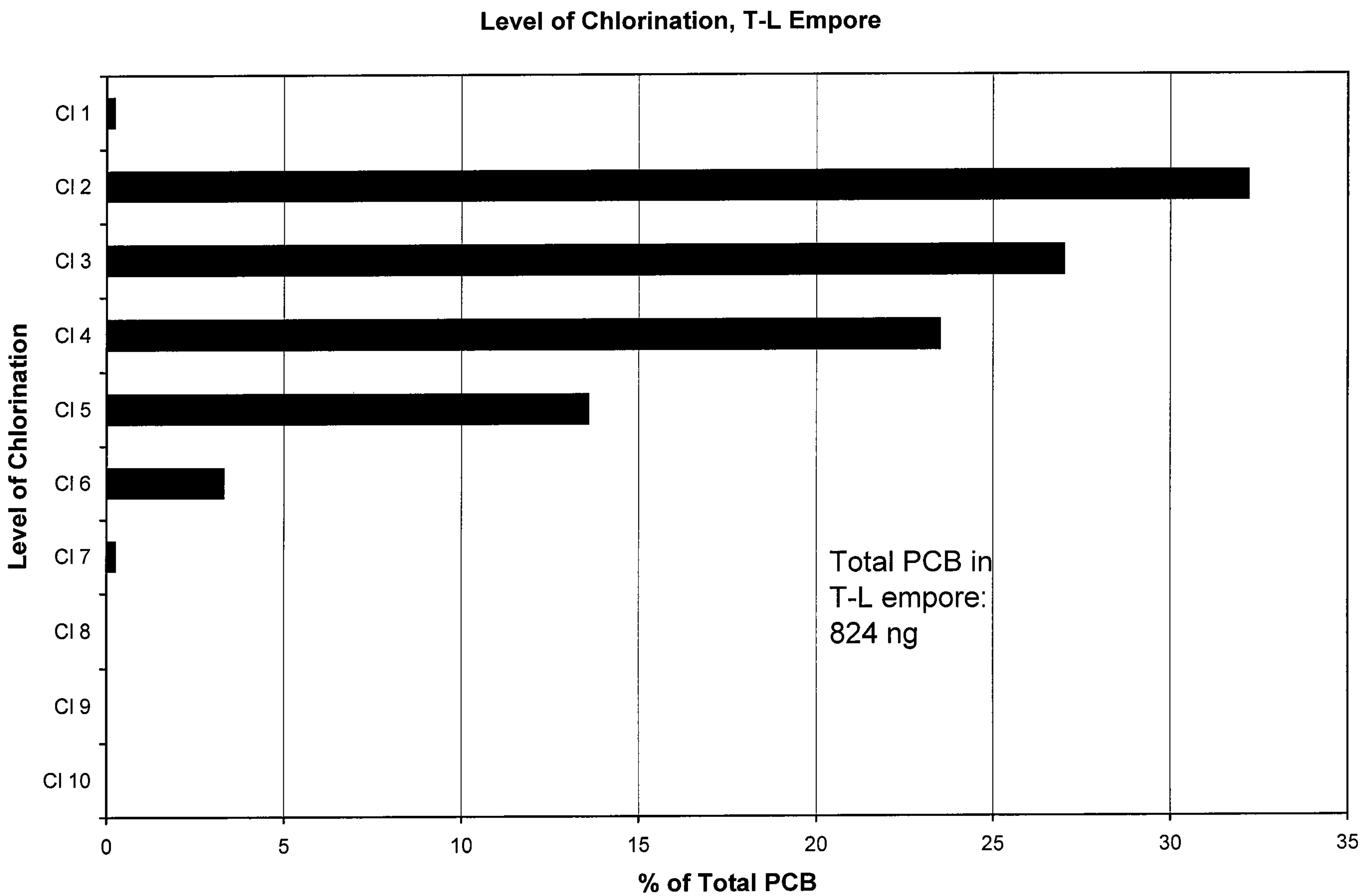

Level of Chlorination, Blank 1 Empore
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in Blank 1 empore: 395 ng


Level of Chlorination, Blank 2 Empore
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in Blank 2 empore: 359 ng

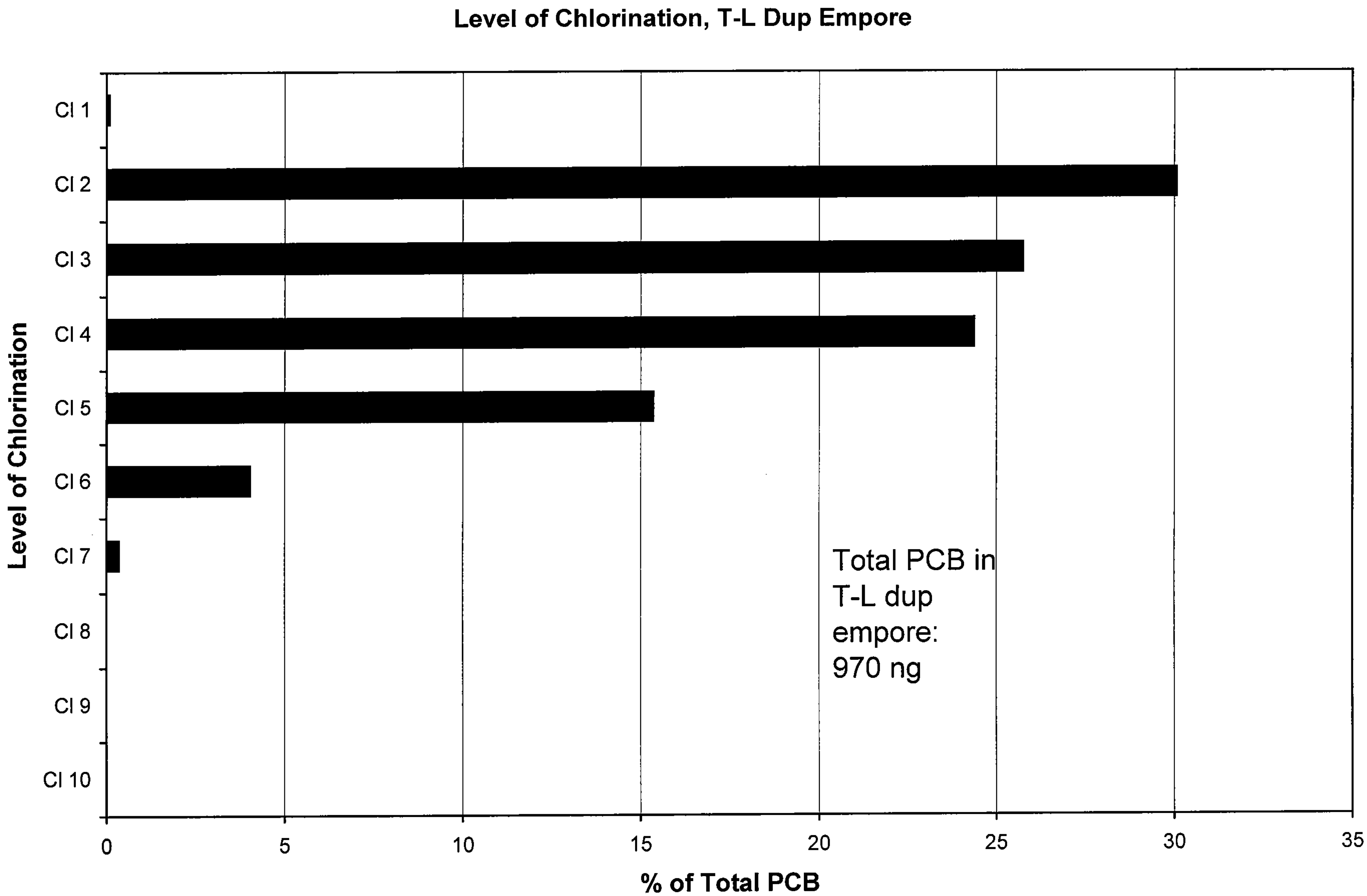

Level of Chlorination, Blank 3 Empore
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in Blank 3 empore: 391 ng

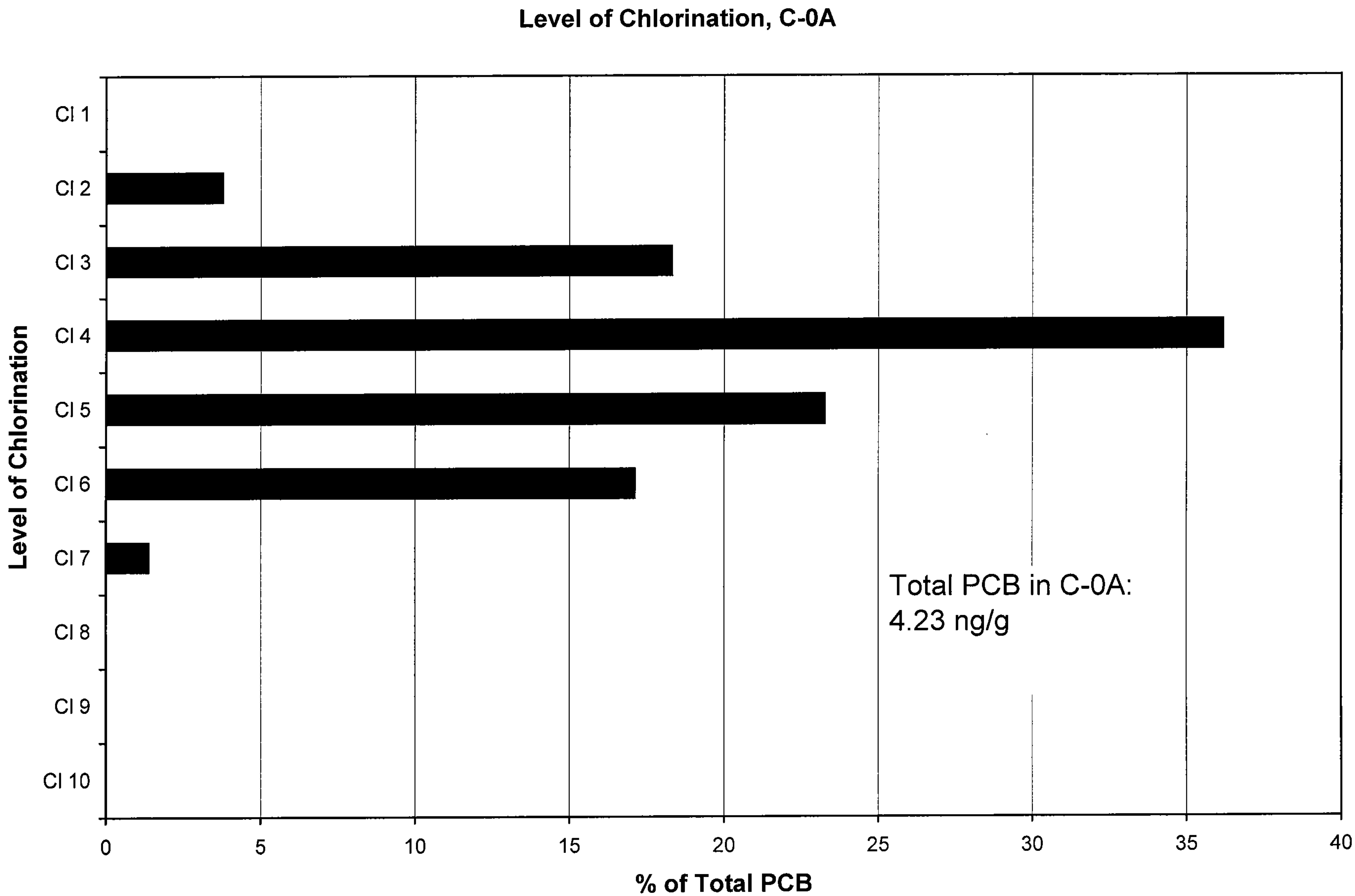


Level of Chlorination, T-0 Empore
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
T-0 empore:
1,391 ng

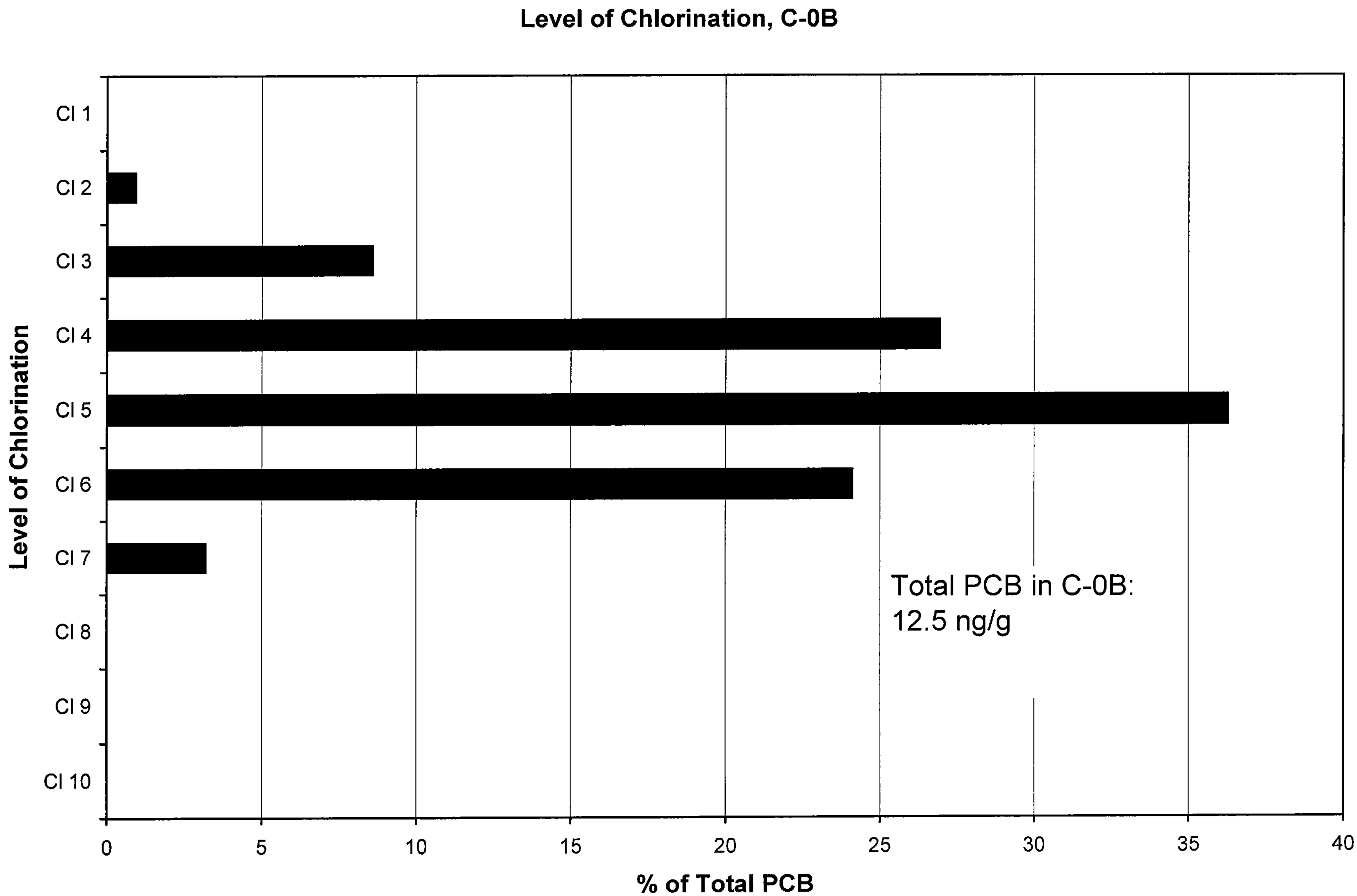


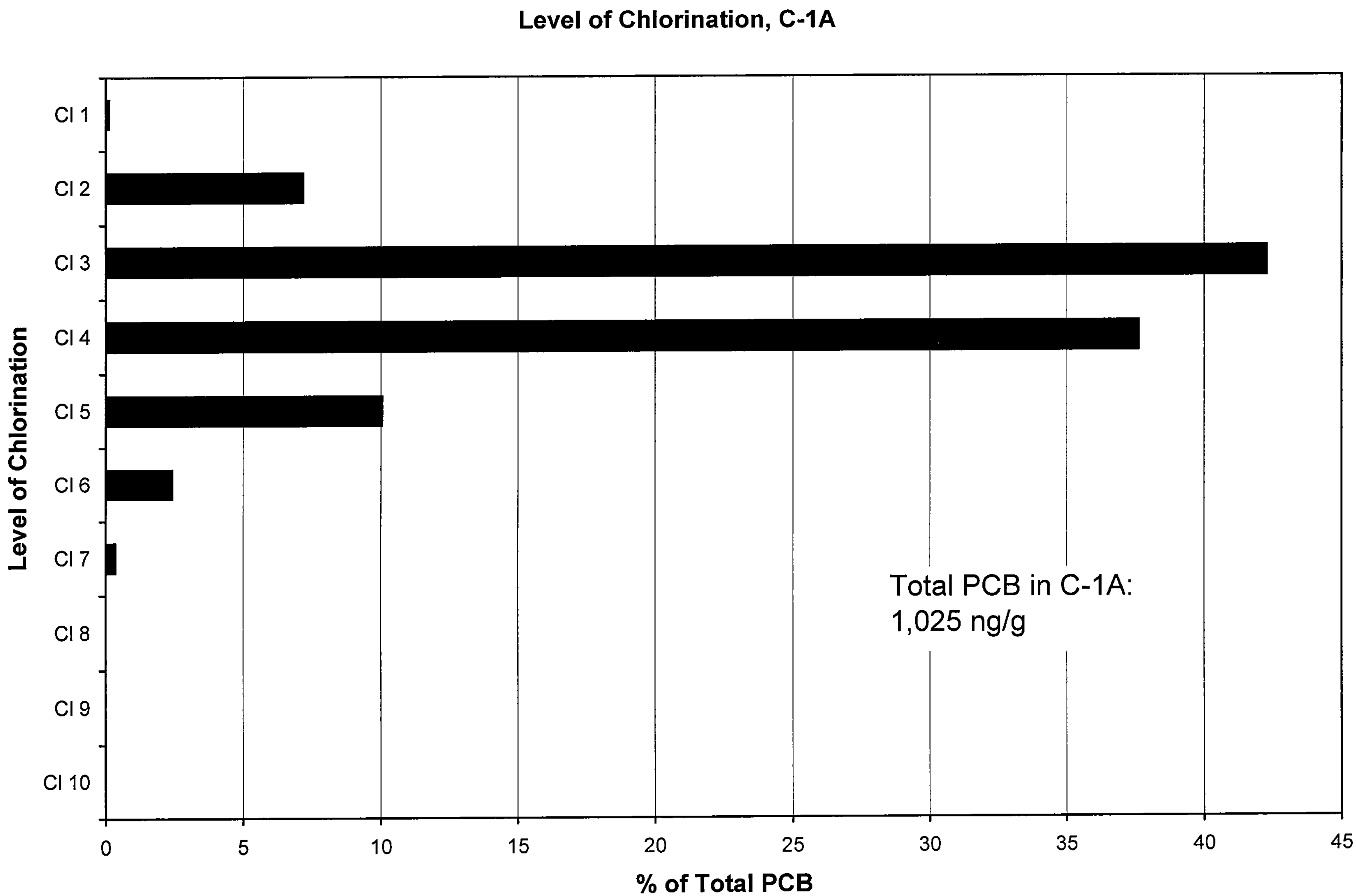
Level of Chlorination, T-L Empore
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
T-L empore:
824 ng


Level of Chlorination, T-L Dup Empore
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in T-L dup empore: 970 ng

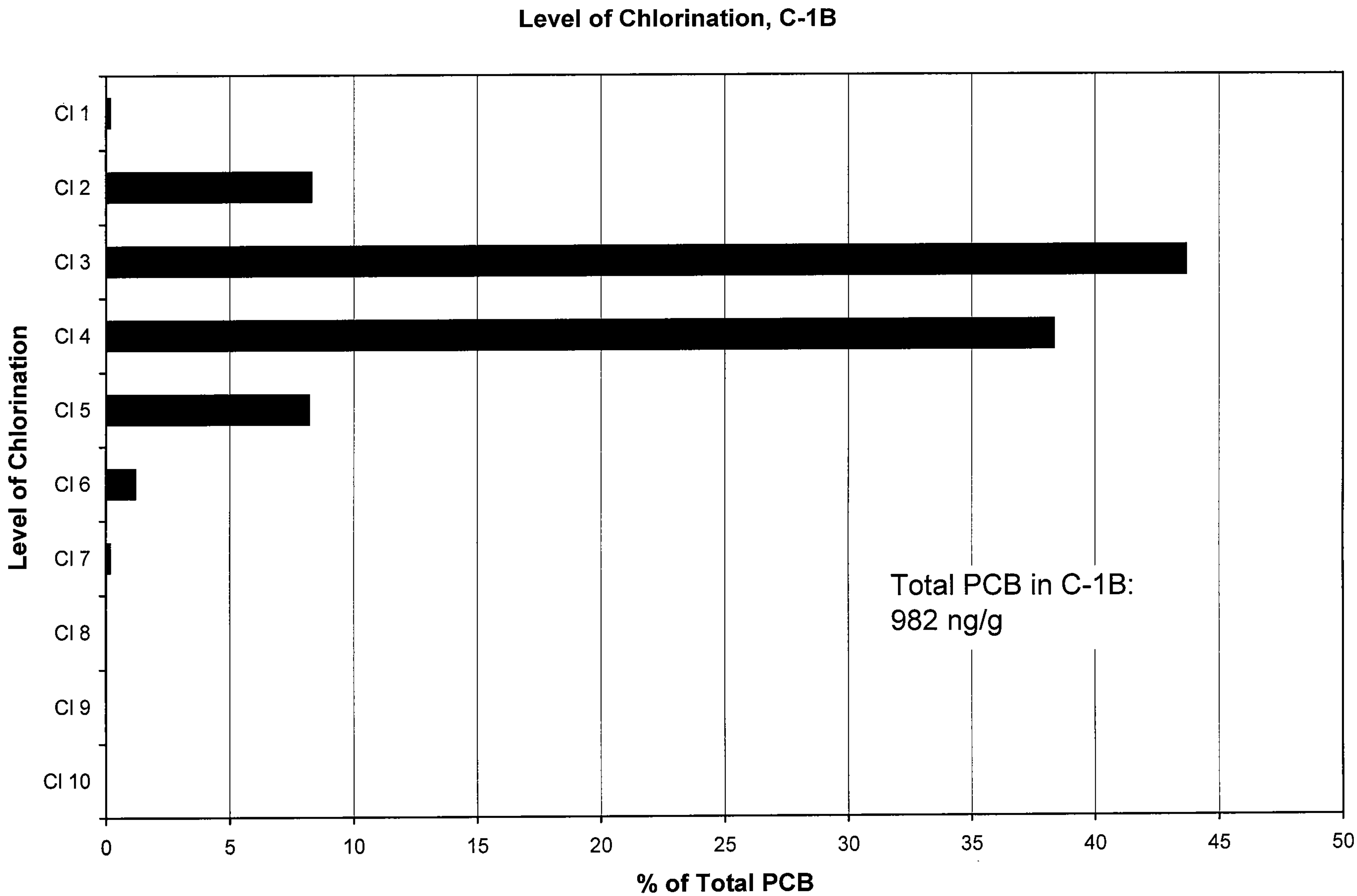


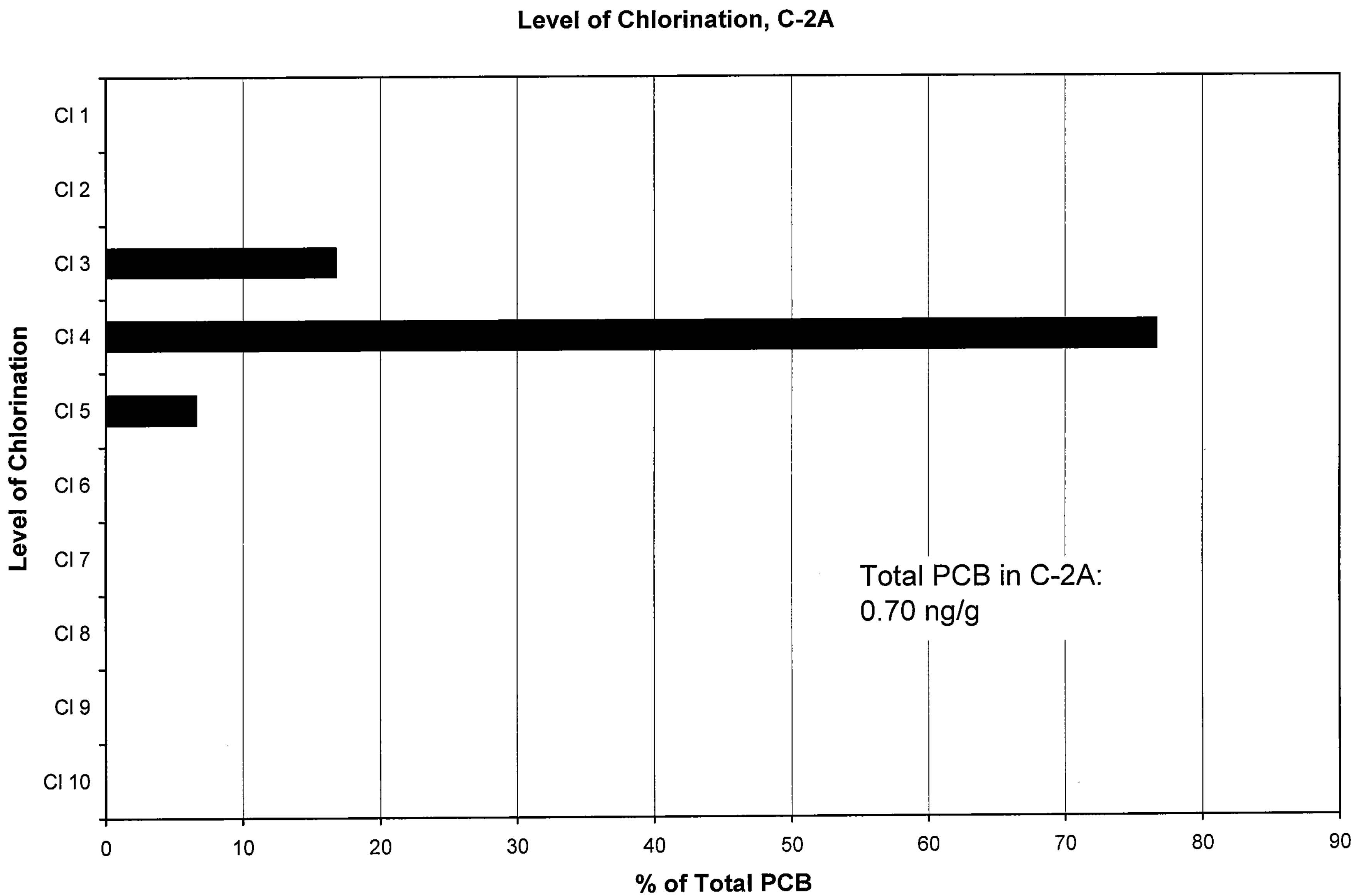
Level of Chlorination, C-0A
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in C-0A:
4.23 ng/g

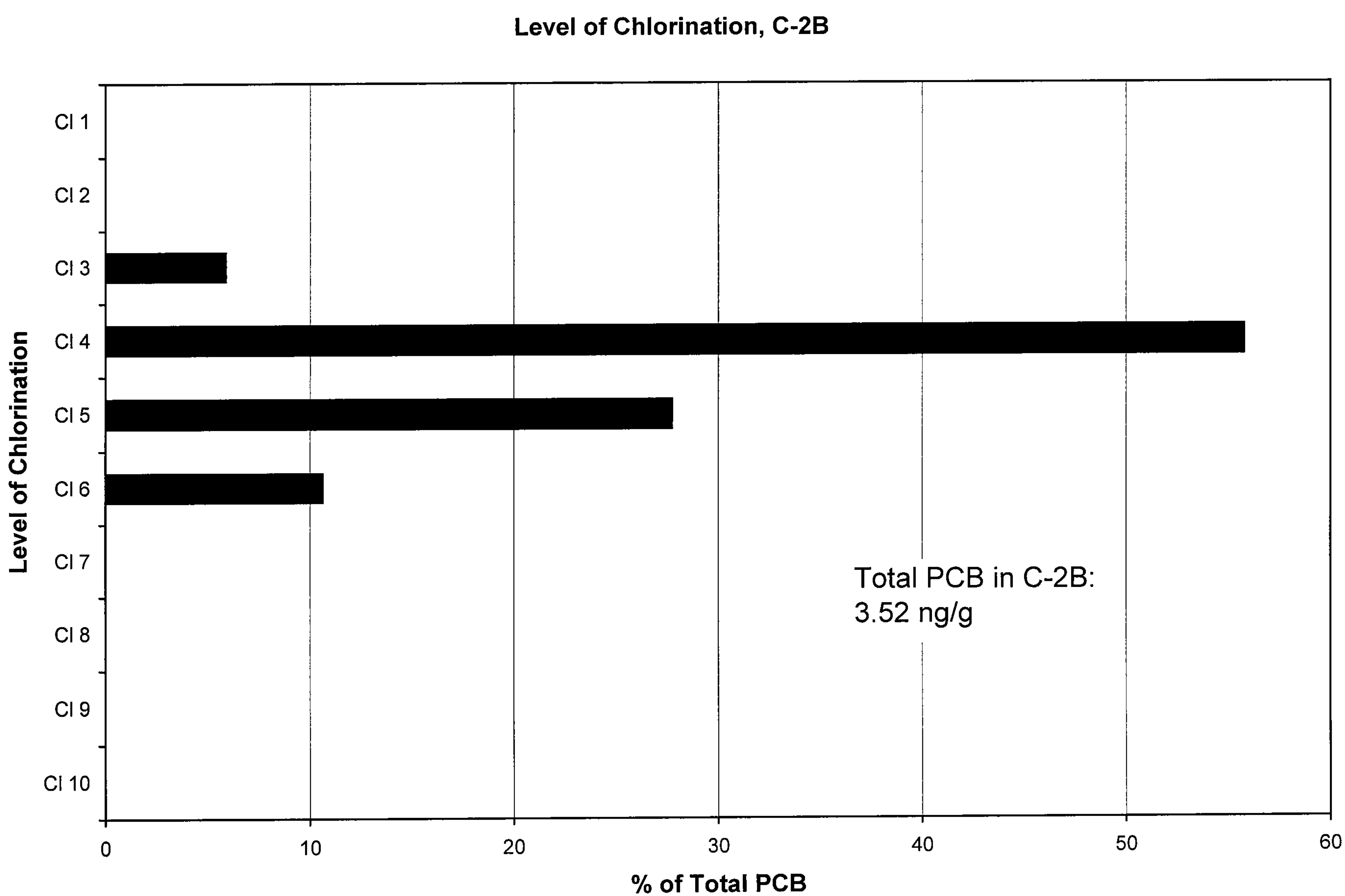

Level of Chlorination, C-0B
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in C-0B:
12.5 ng/g



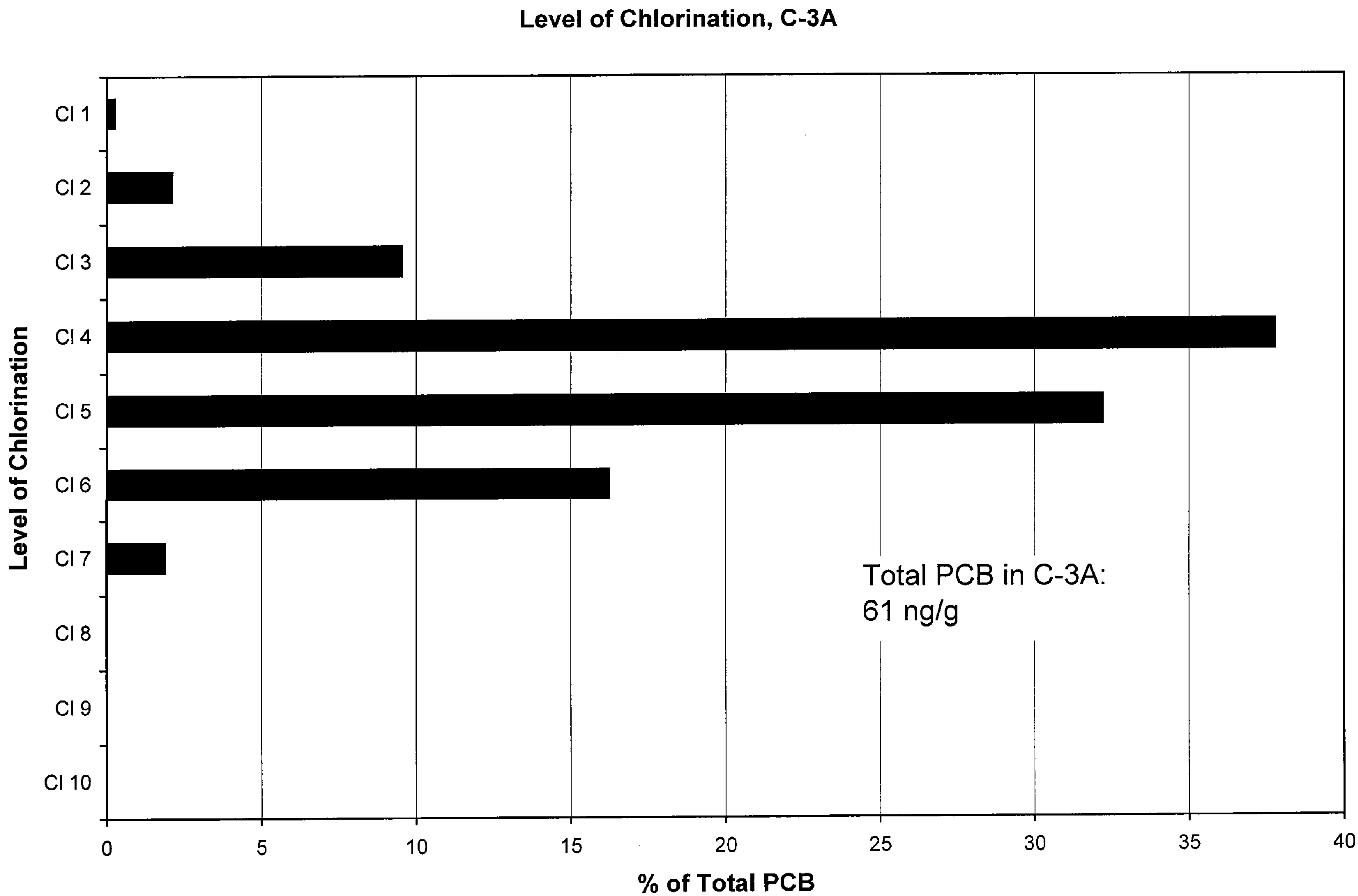
Level of Chlorination, C-1A
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in C-1A:
1,025 ng/g


Level of Chlorination, C-1B
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
50
% of Total PCB
Total PCB in C-1B:
982 ng/g


Level of Chlorination, C-2A
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
70
80
90
% of Total PCB
Total PCB in C-2A:
0.70 ng/g

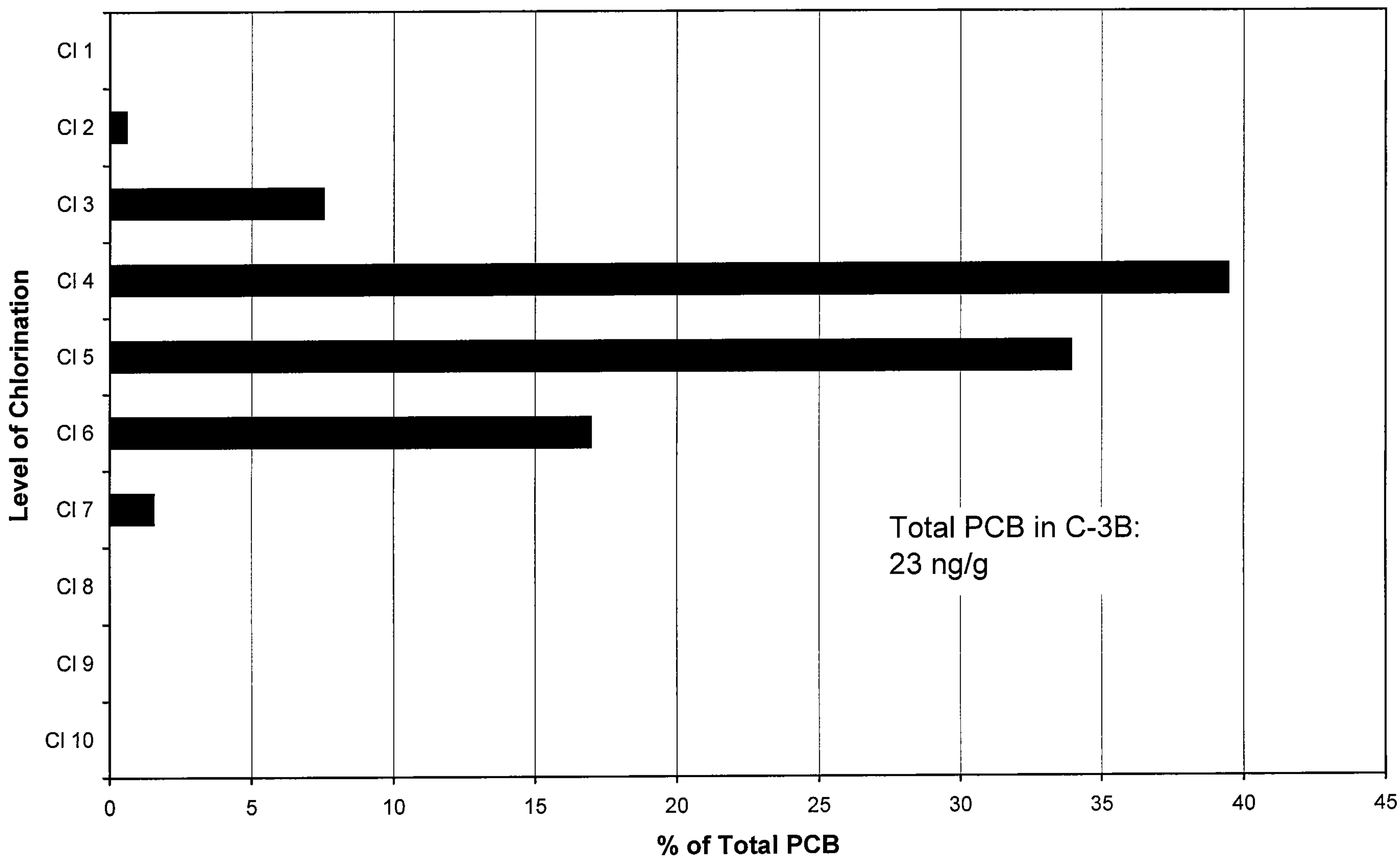


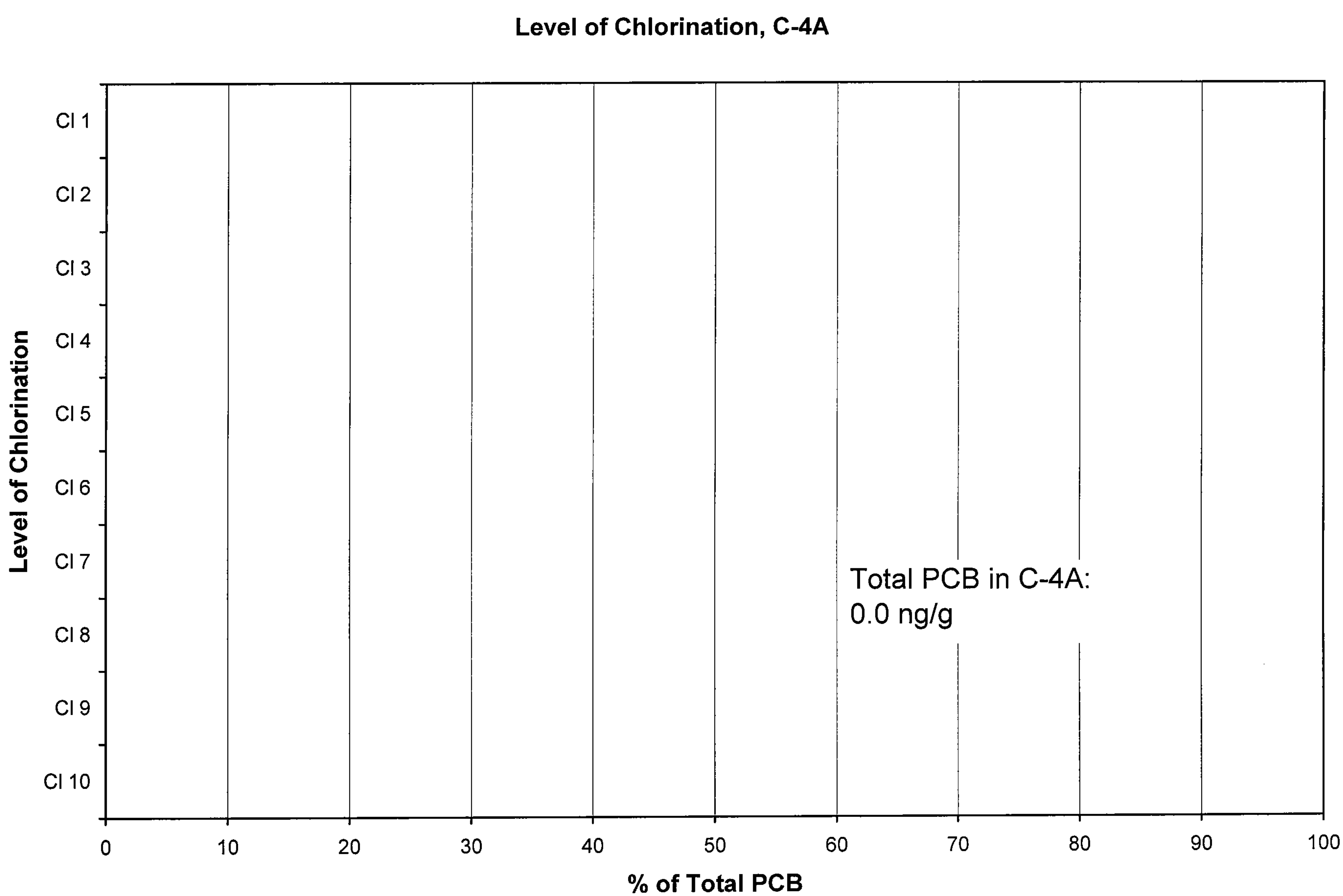
Level of Chlorination, C-2B
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
% of Total PCB
Total PCB in C-2B:
3.52 ng/g



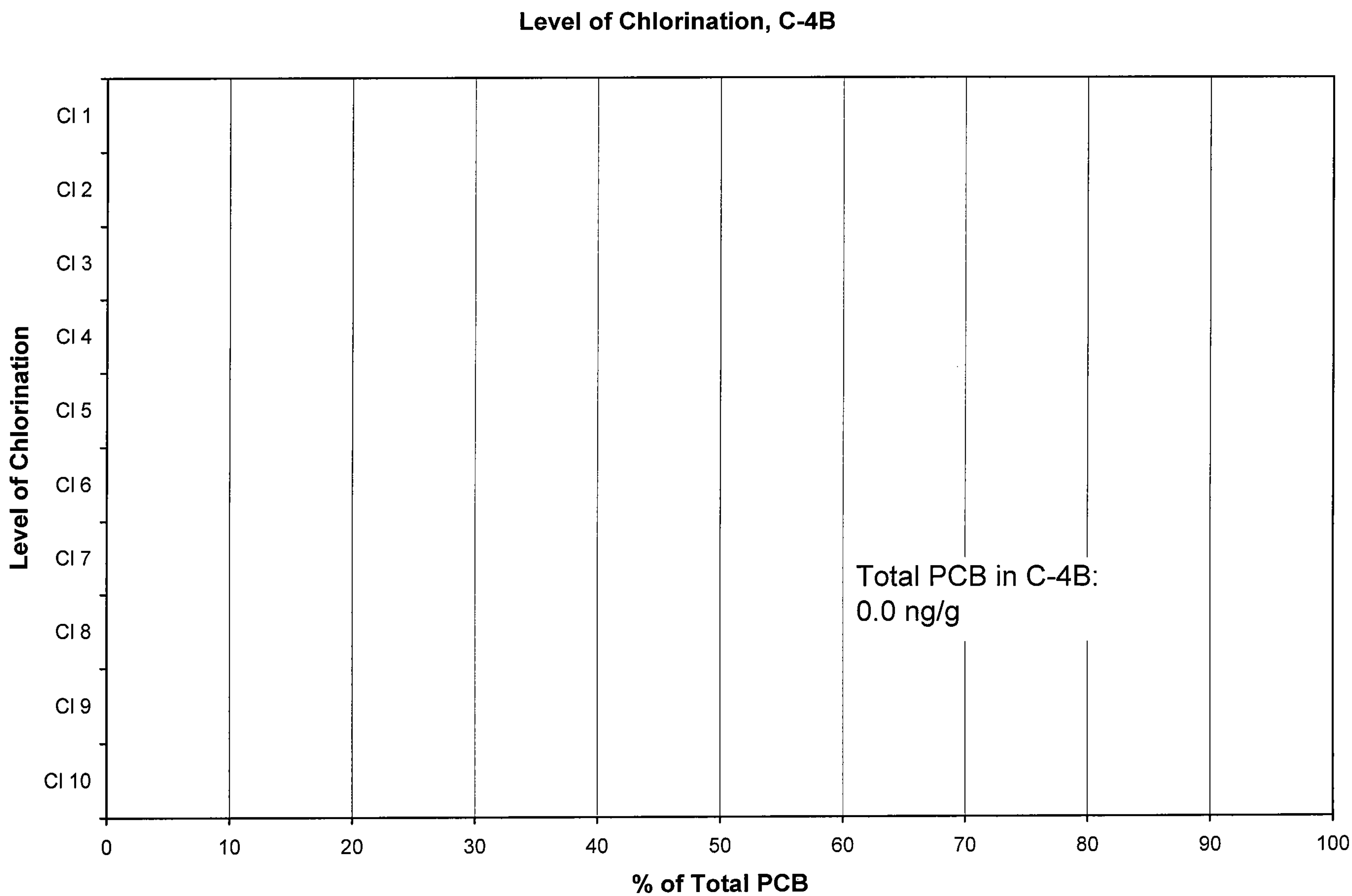
Level of Chlorination, C-3A
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in C-3A:
61 ng/g

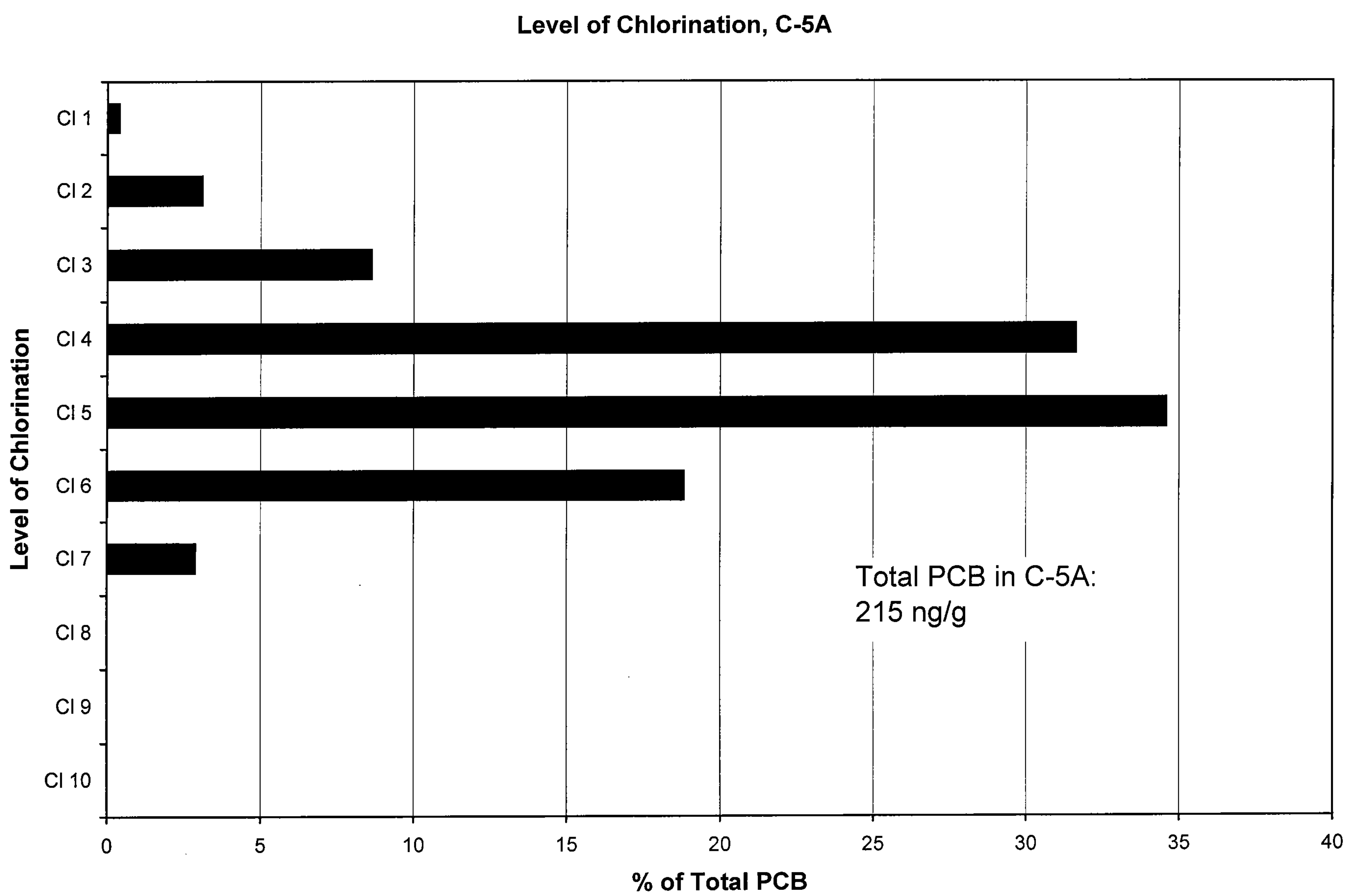
Level of Chlorination, C-3B



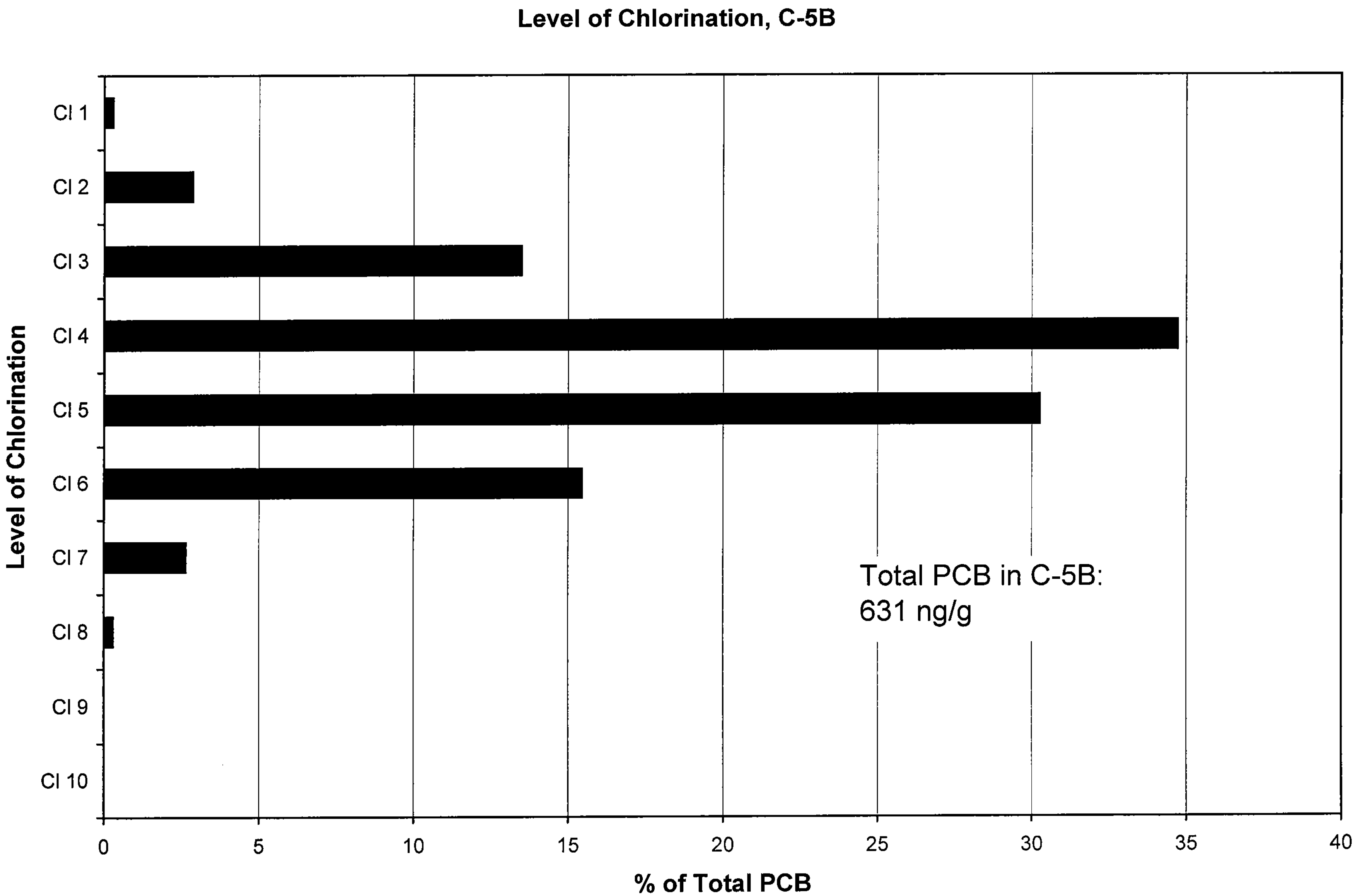


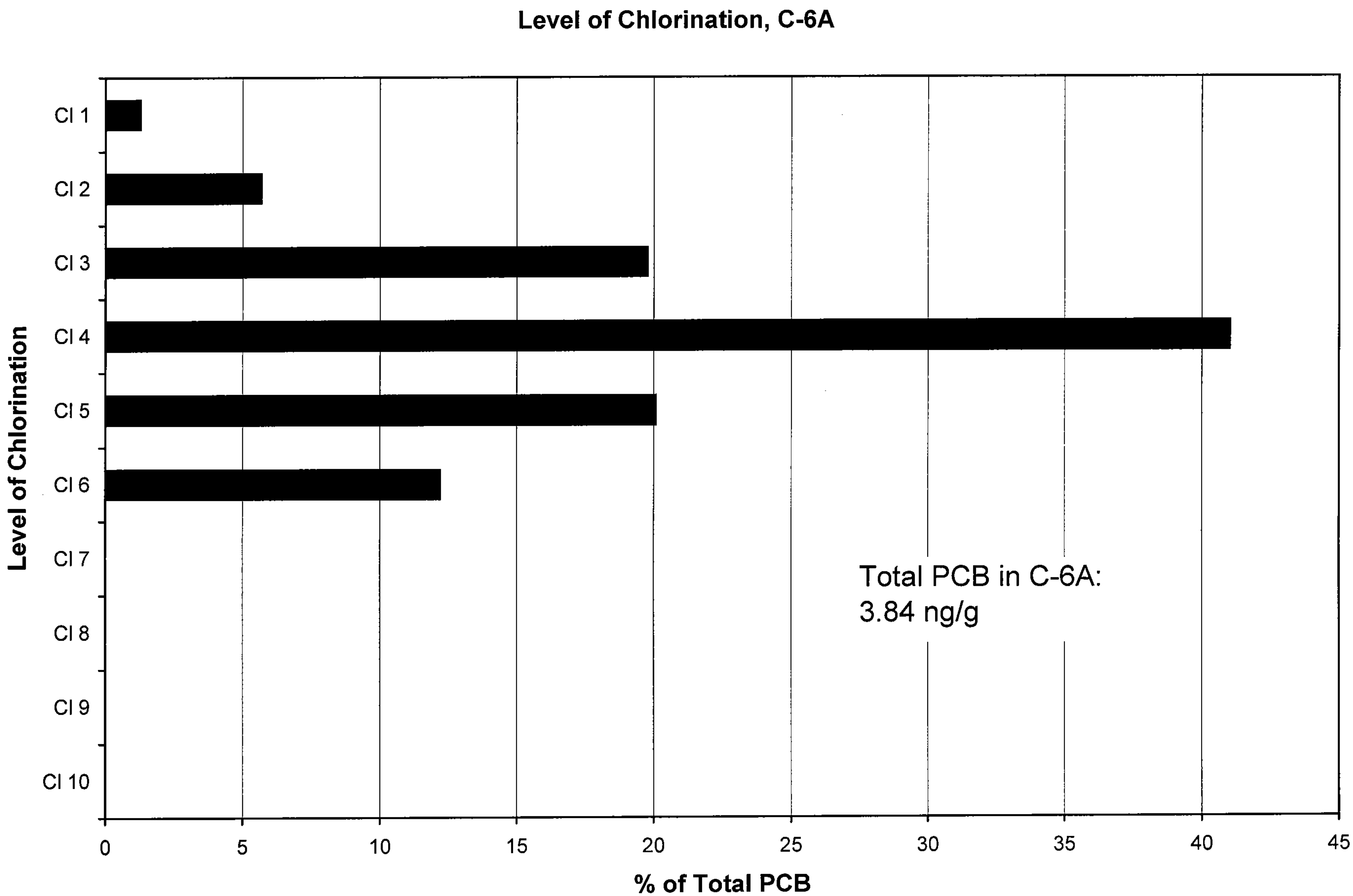
Level of Chlorination, C-4A
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
70
80
90
100
% of Total PCB
Total PCB in C-4A:
0.0 ng/g


Level of Chlorination, C-4B
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
70
80
90
100
% of Total PCB
Total PCB in C-4B:
0.0 ng/g

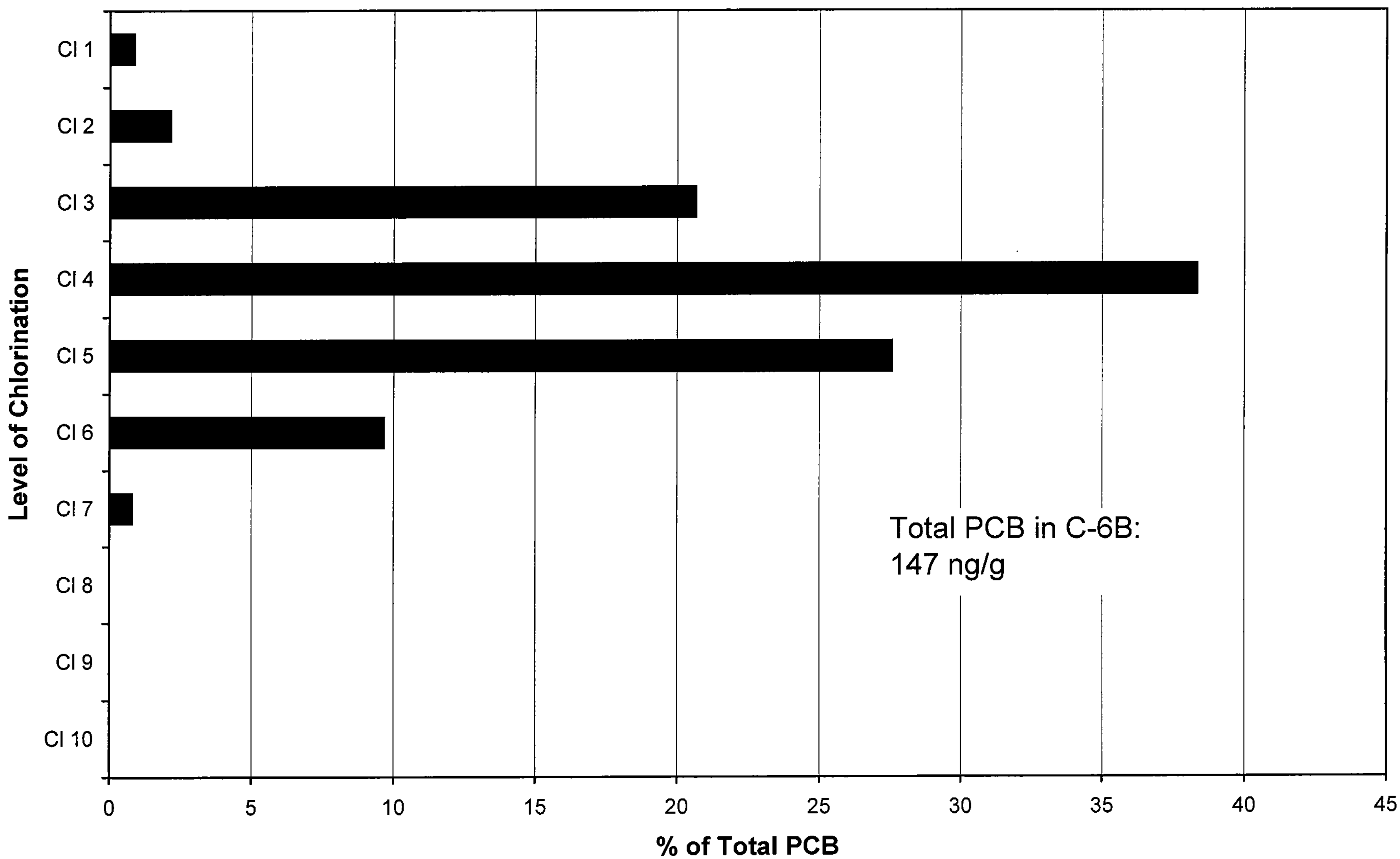


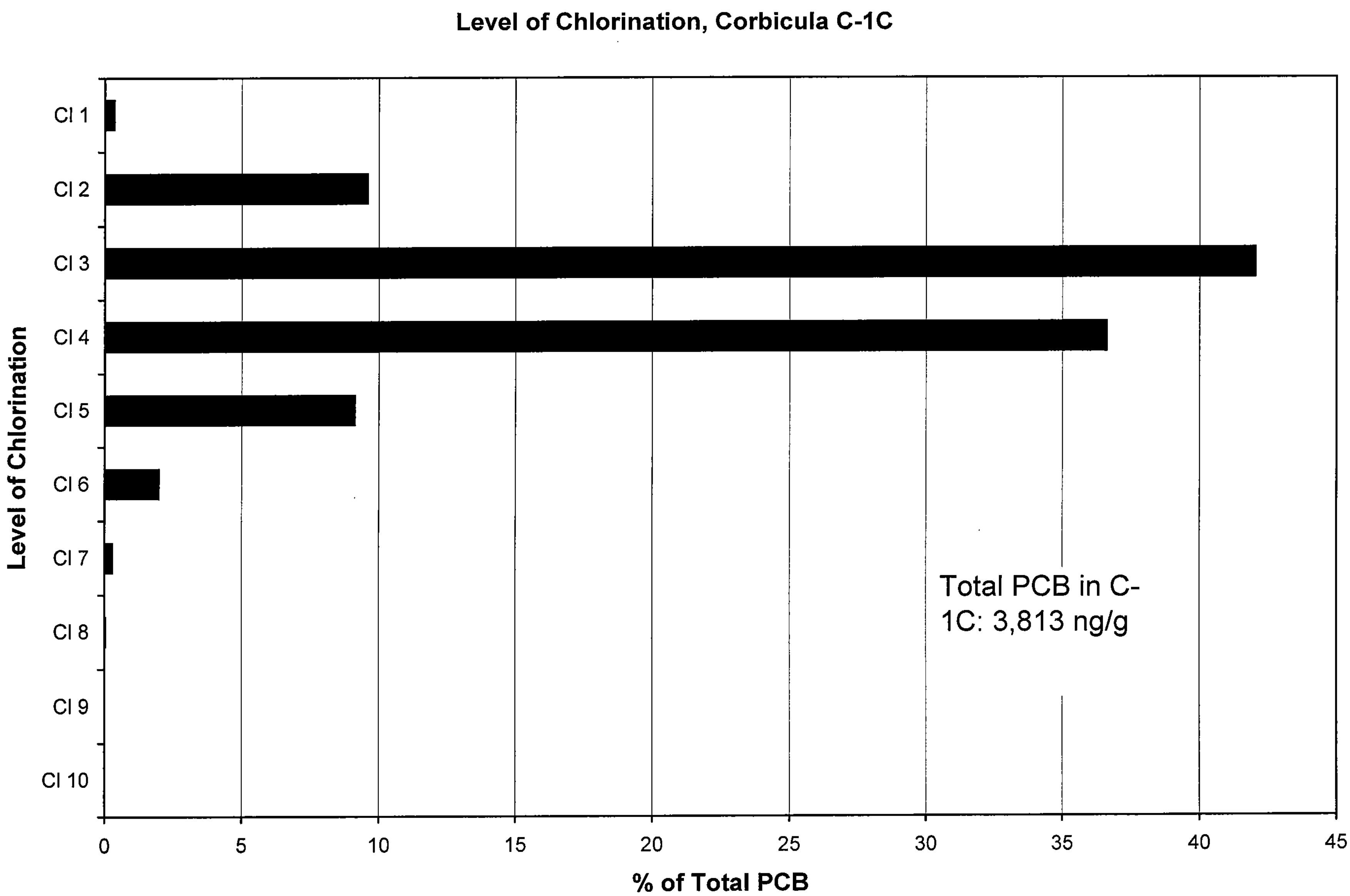
Level of Chlorination, C-5A
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in C-5A:
215 ng/g

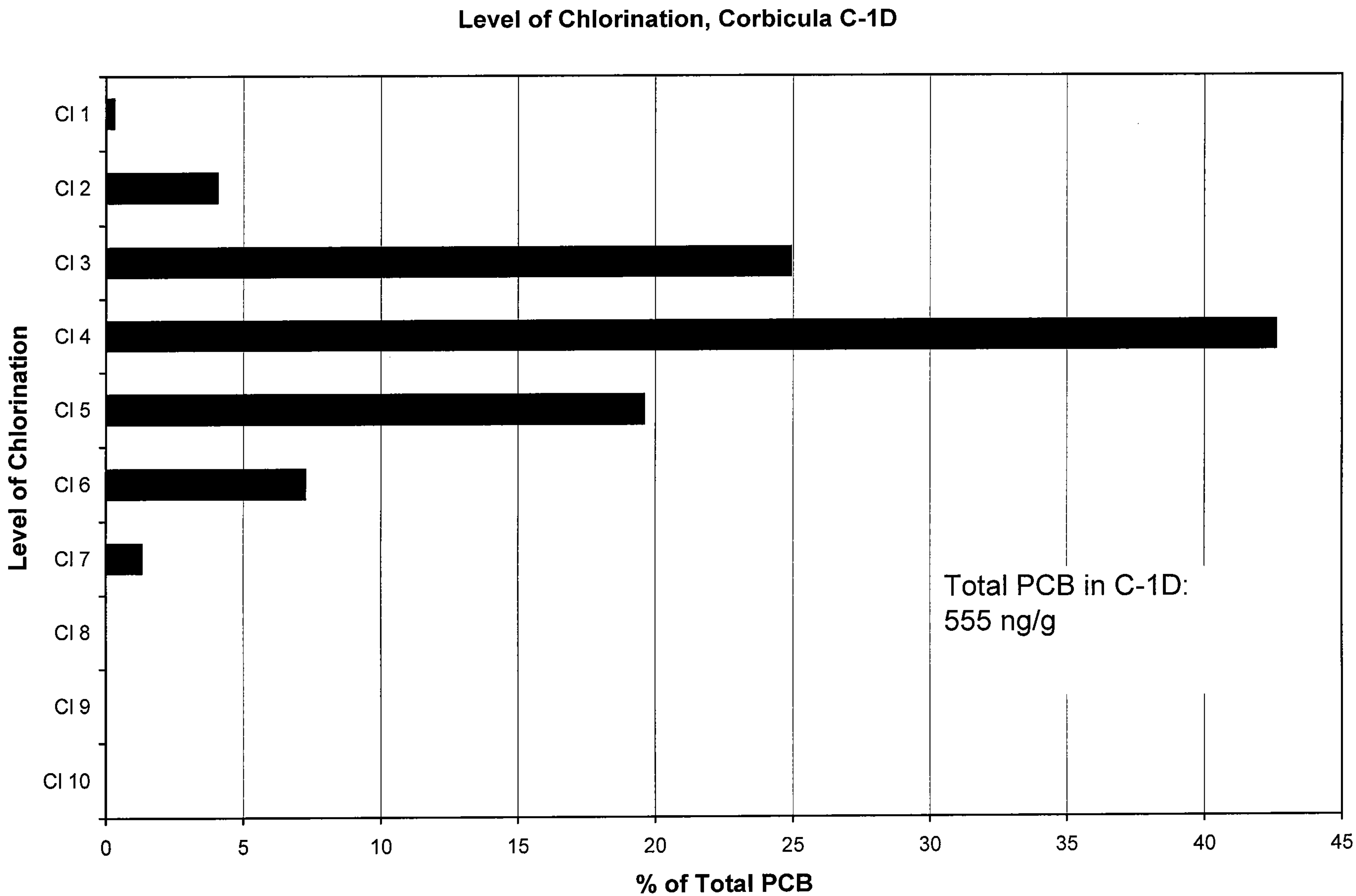

Level of Chlorination, C-5B
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in C-5B:
631 ng/g

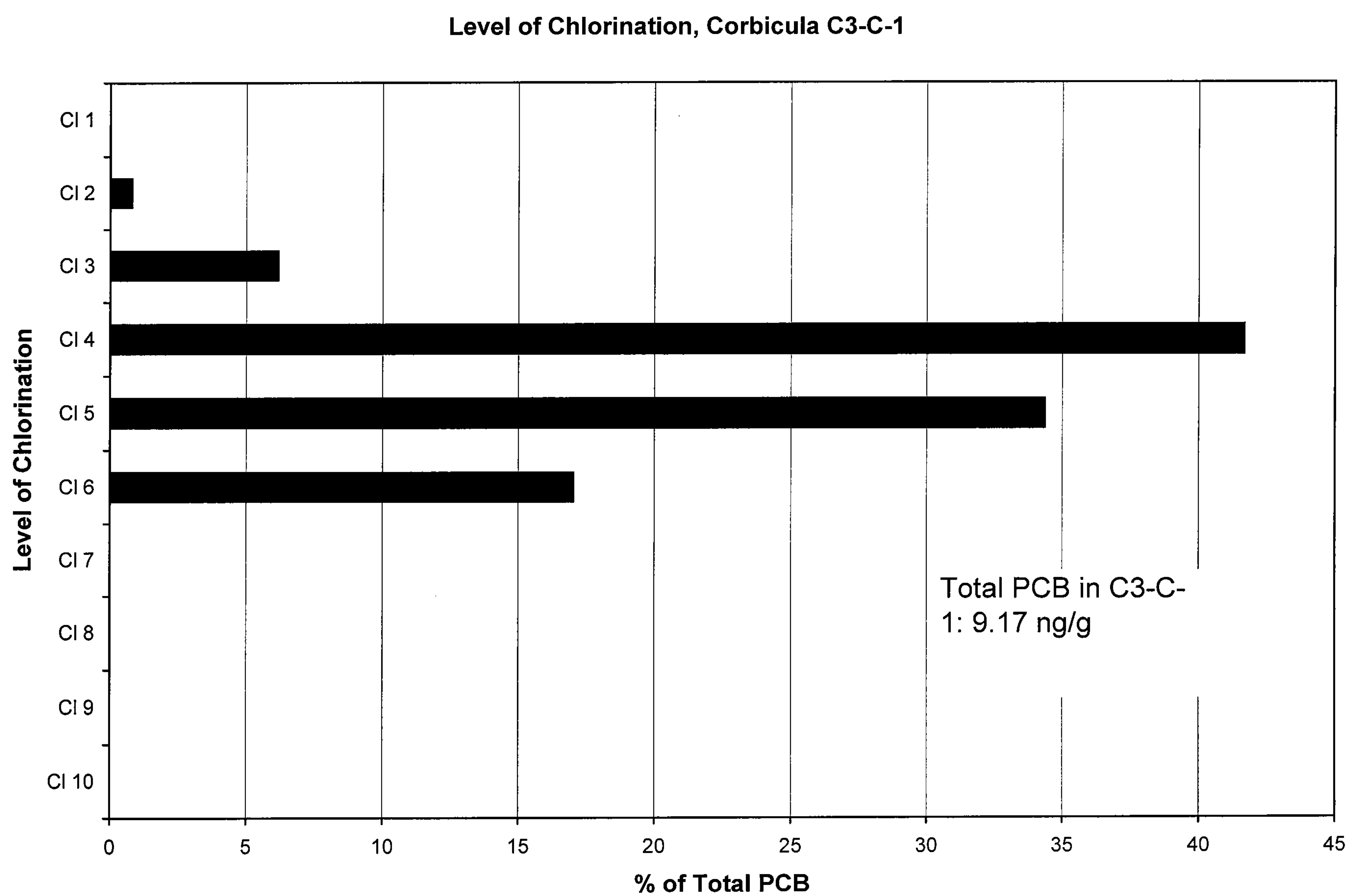

Level of Chlorination, C-6A
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in C-6A:
3.84 ng/g

Level of Chlorination, C-6B

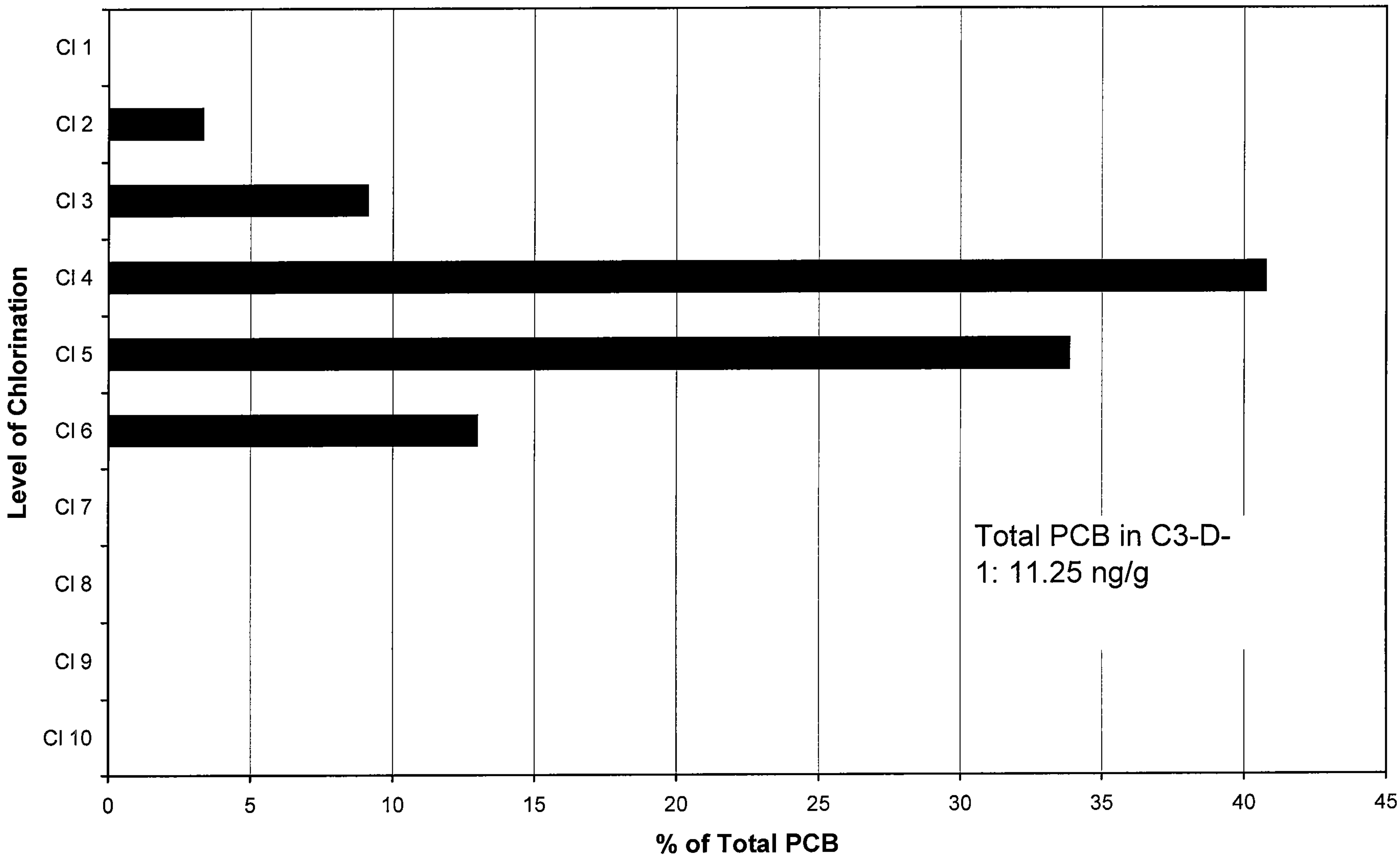


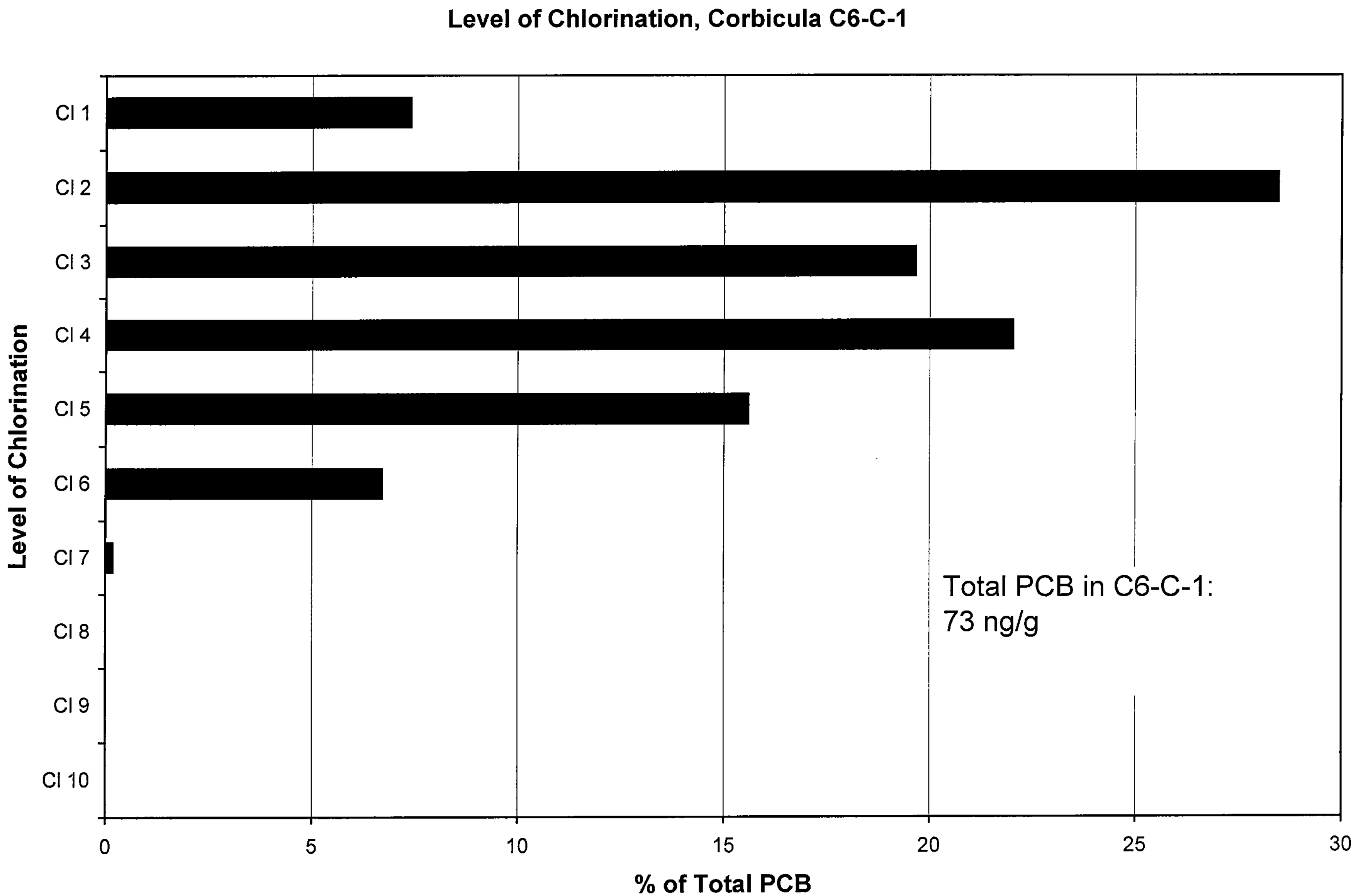

Level of Chlorination, Corbicula C-1C
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in C-1C: 3,813 ng/g


Level of Chlorination, Corbicula C-1D
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in C-1D:
555 ng/g

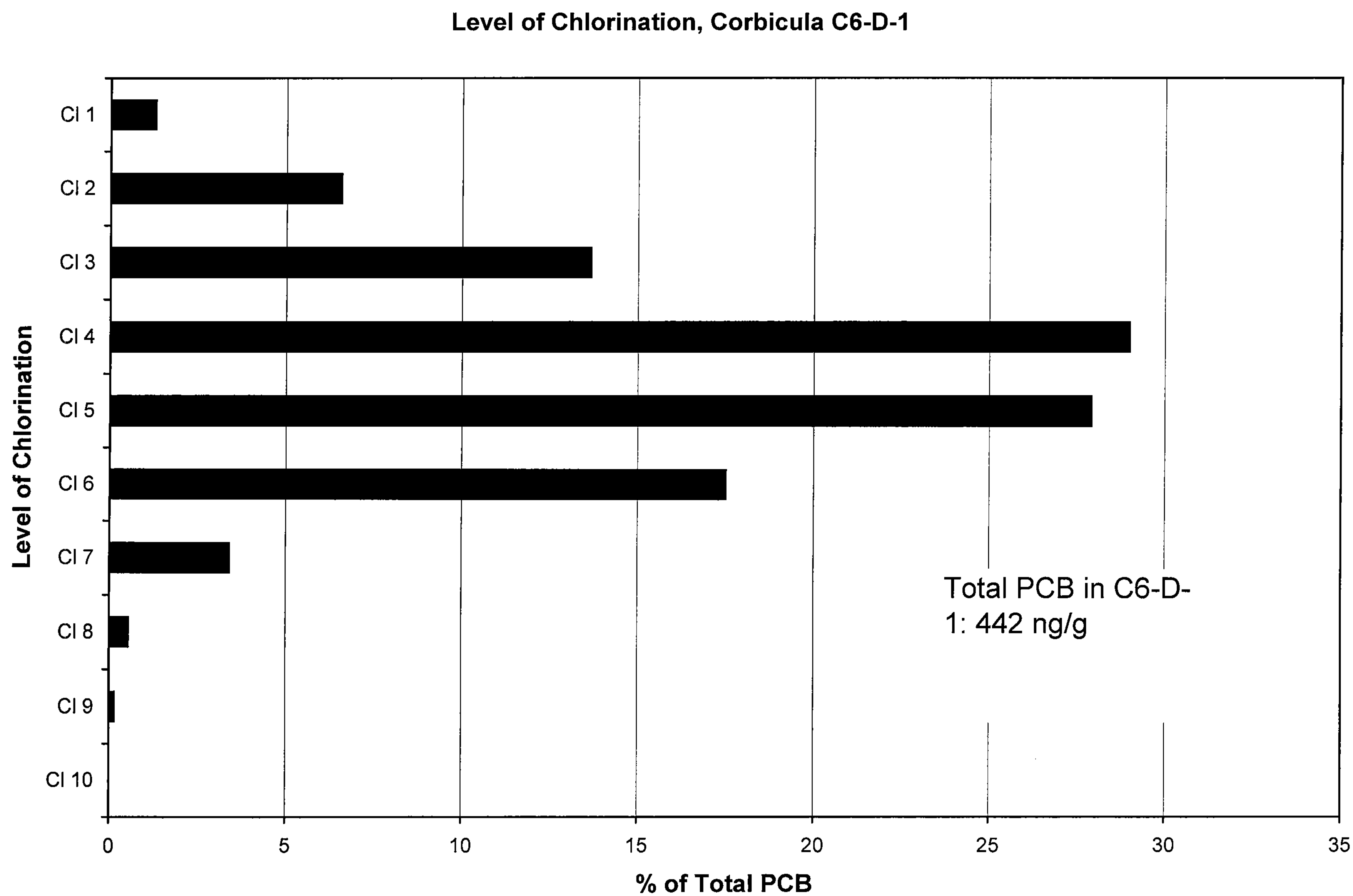

Level of Chlorination, Corbicula C3-C-1
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Total PCB in C3-C-1: 9.17 ng/g
0
5
10
15
20
25
30
35
40
45
% of Total PCB

Level of Chlorination, Corbicula C3-D-1

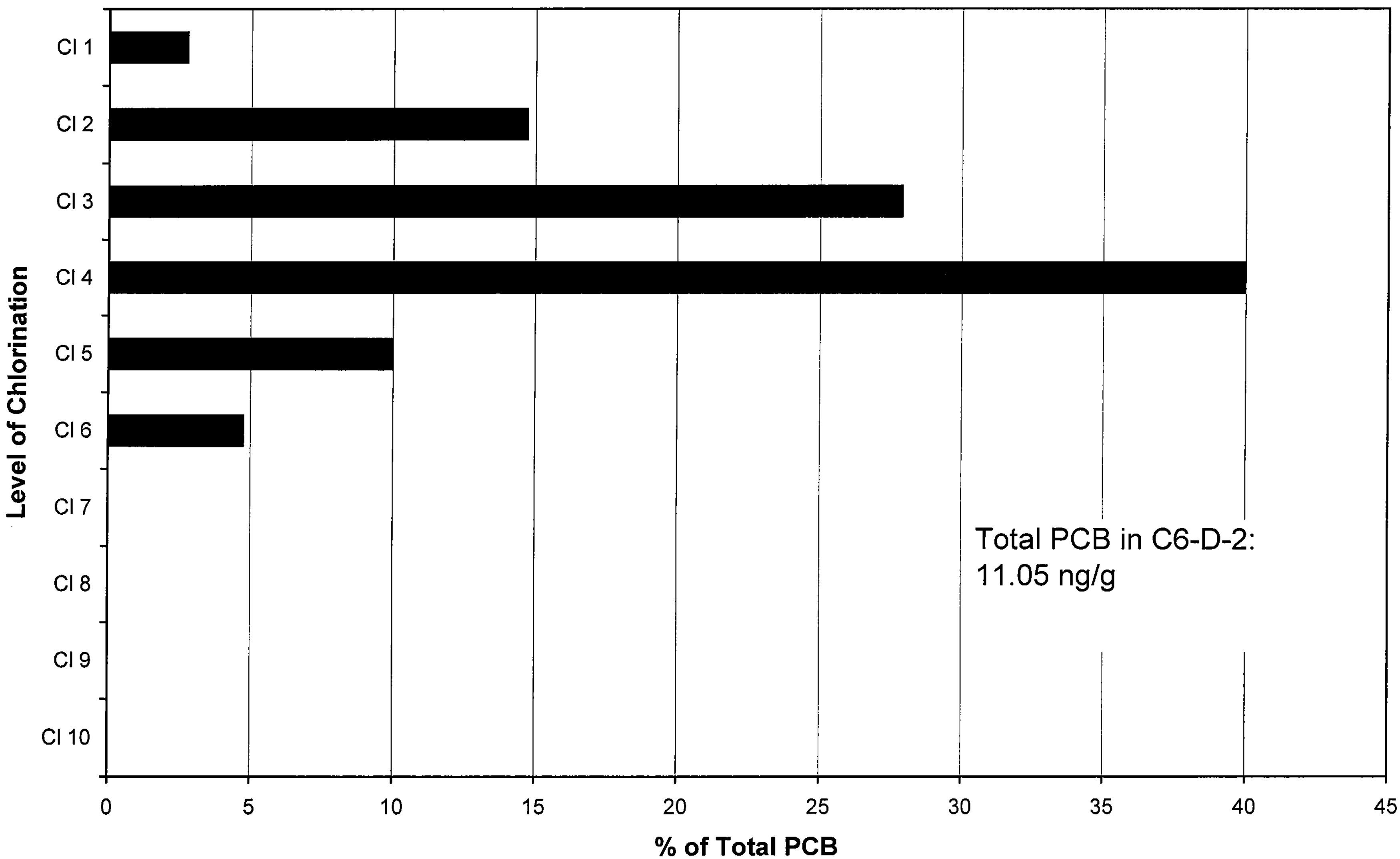




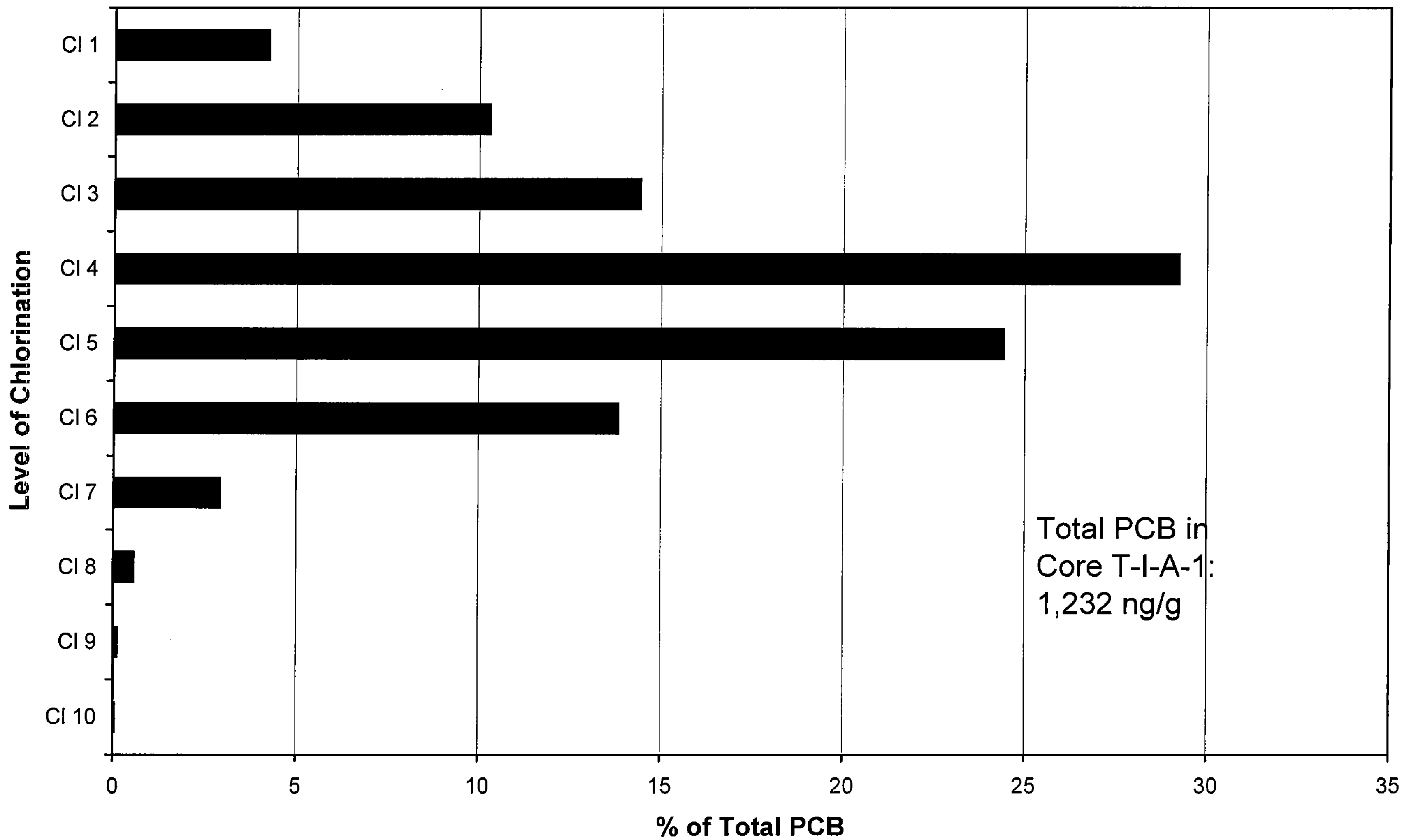
Level of Chlorination, Corbicula C6-C-1
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
% of Total PCB
Total PCB in C6-C-1:
73 ng/g

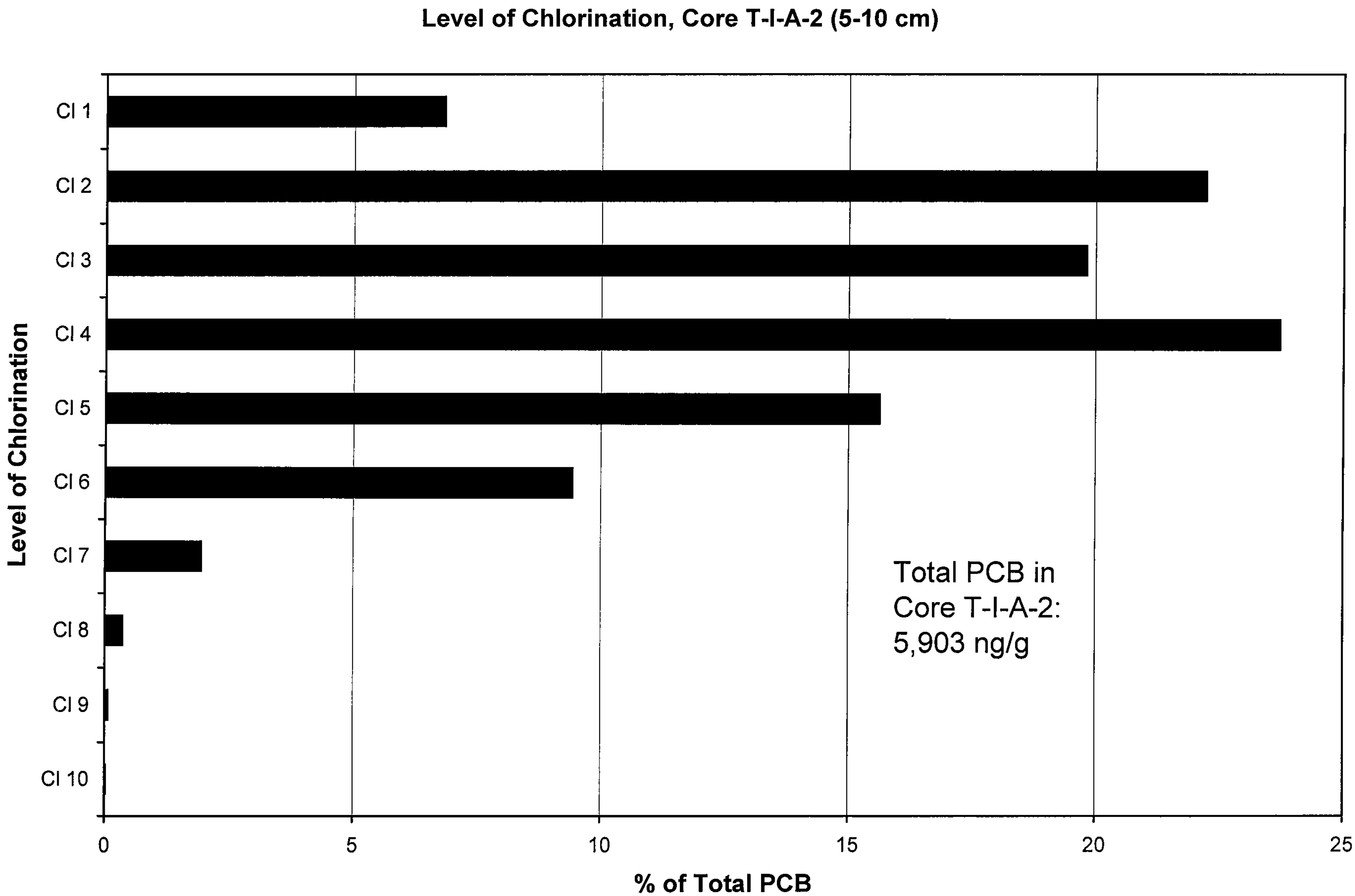

Level of Chlorination, Corbicula C6-D-1
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in C6-D-1: 442 ng/g

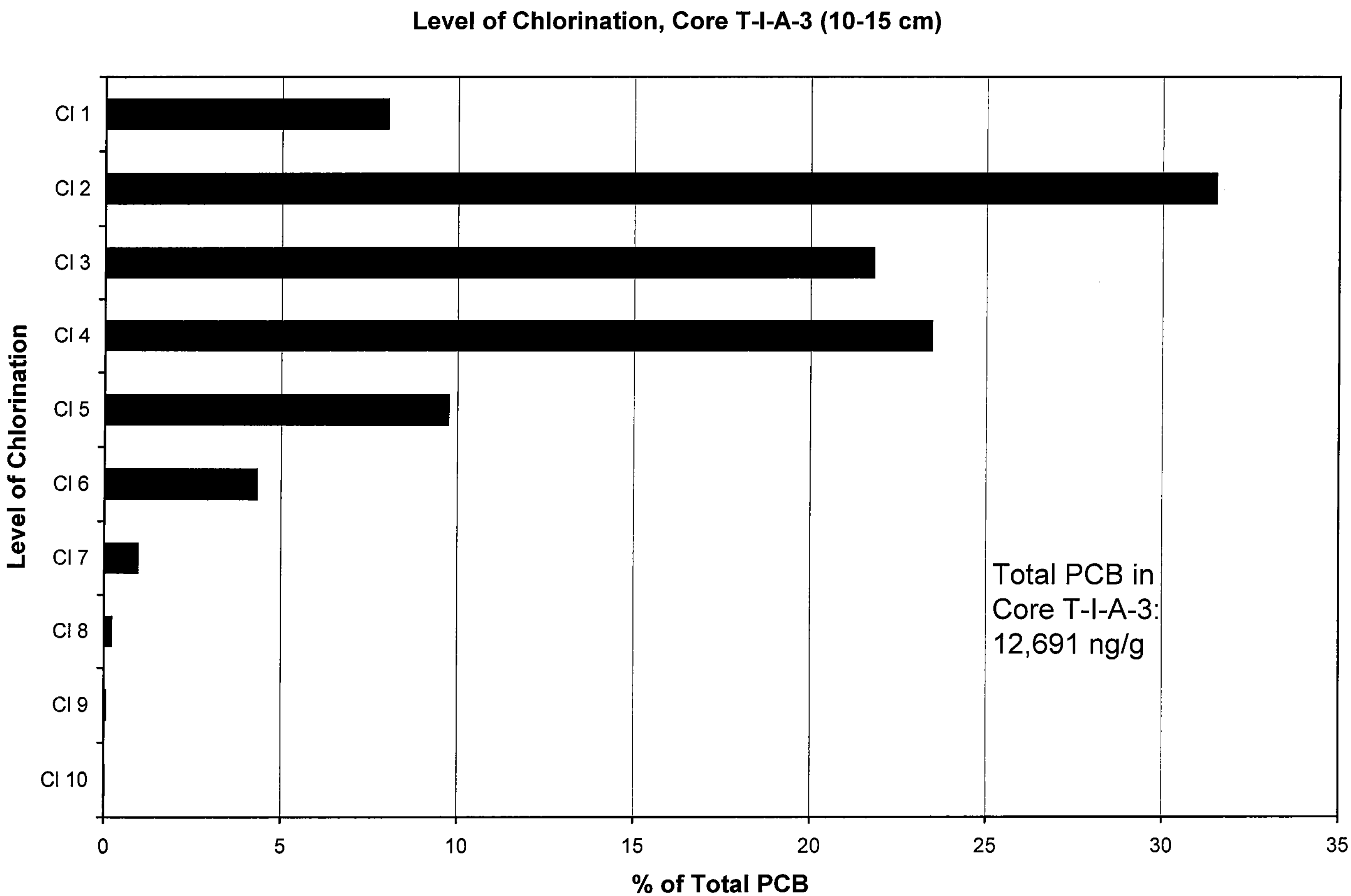
Level of Chlorination, Corbicula C6-D-2



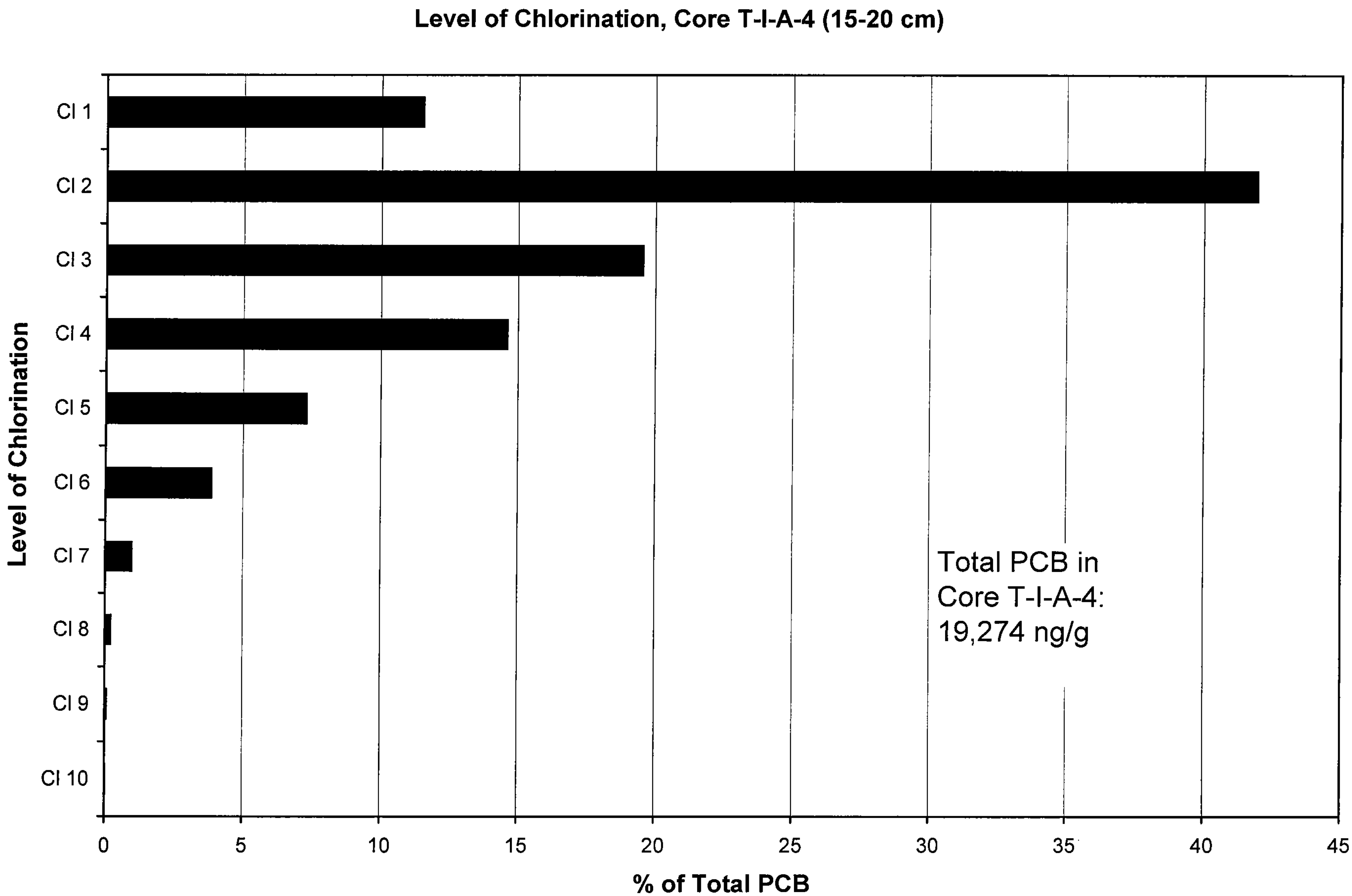
Level of Chlorination, Core T-I-A-1 (0-5 cm)

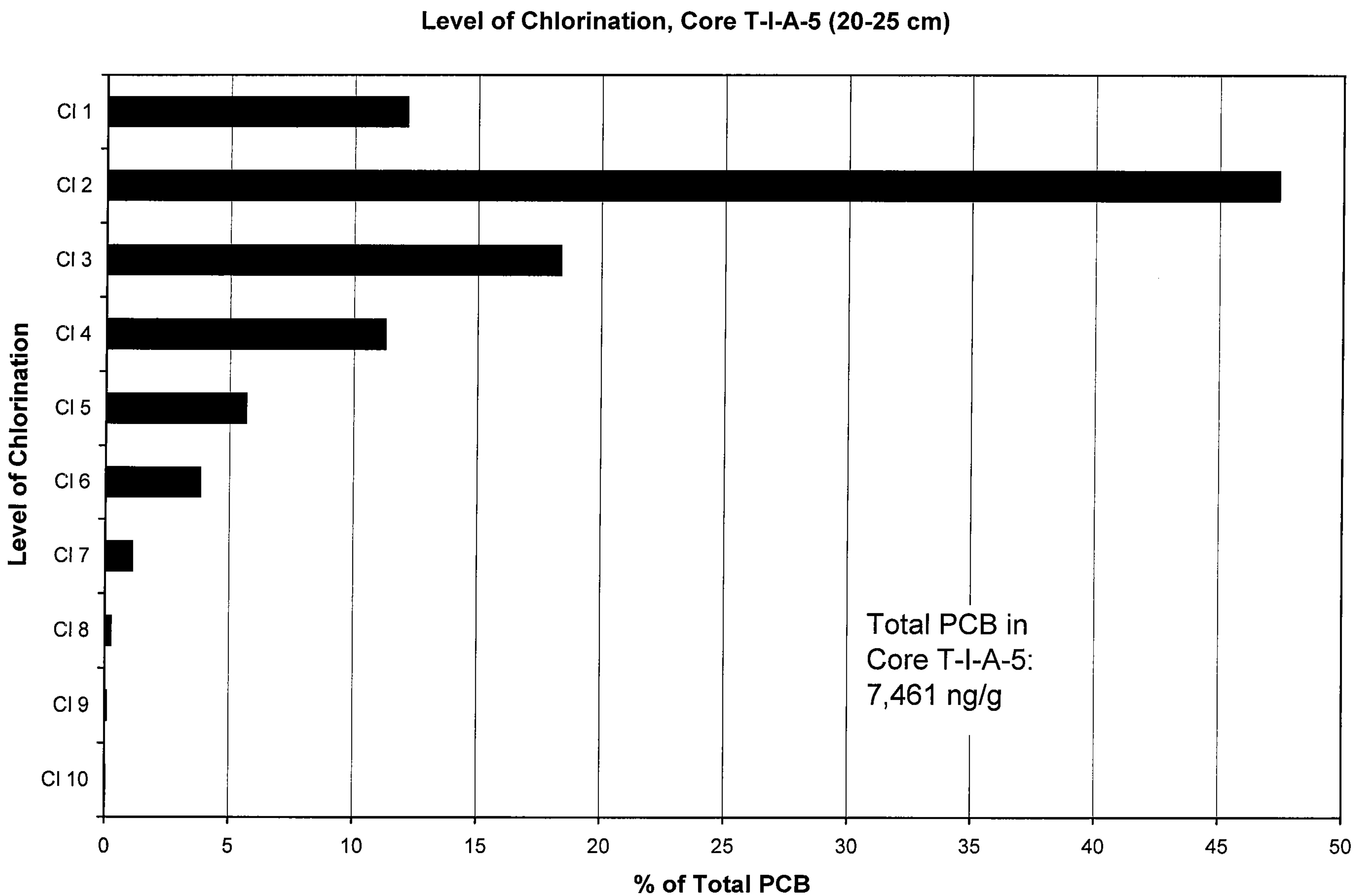


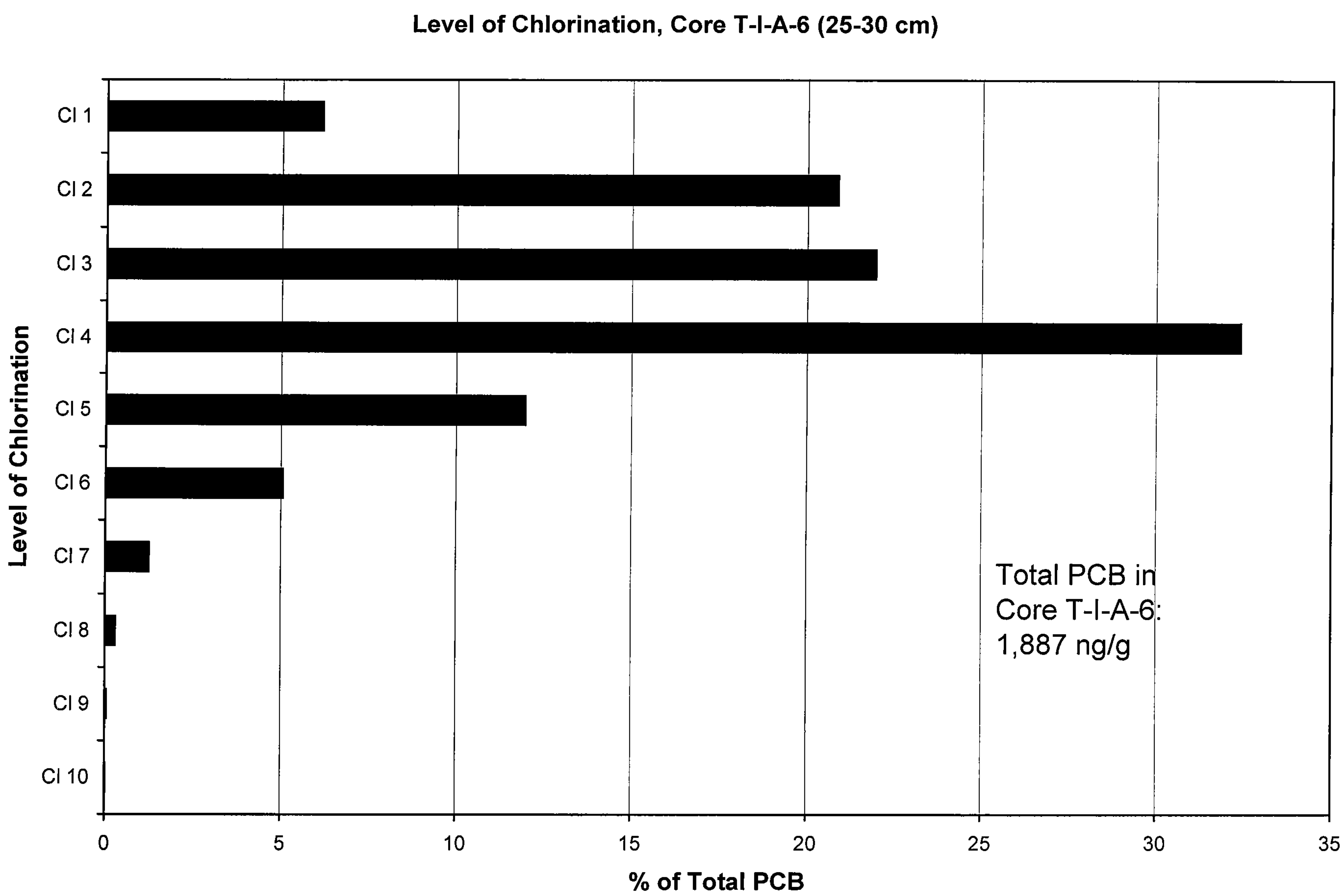

Level of Chlorination, Core T-I-A-2 (5-10 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
% of Total PCB
Total PCB in
Core T-I-A-2:
5,903 ng/g



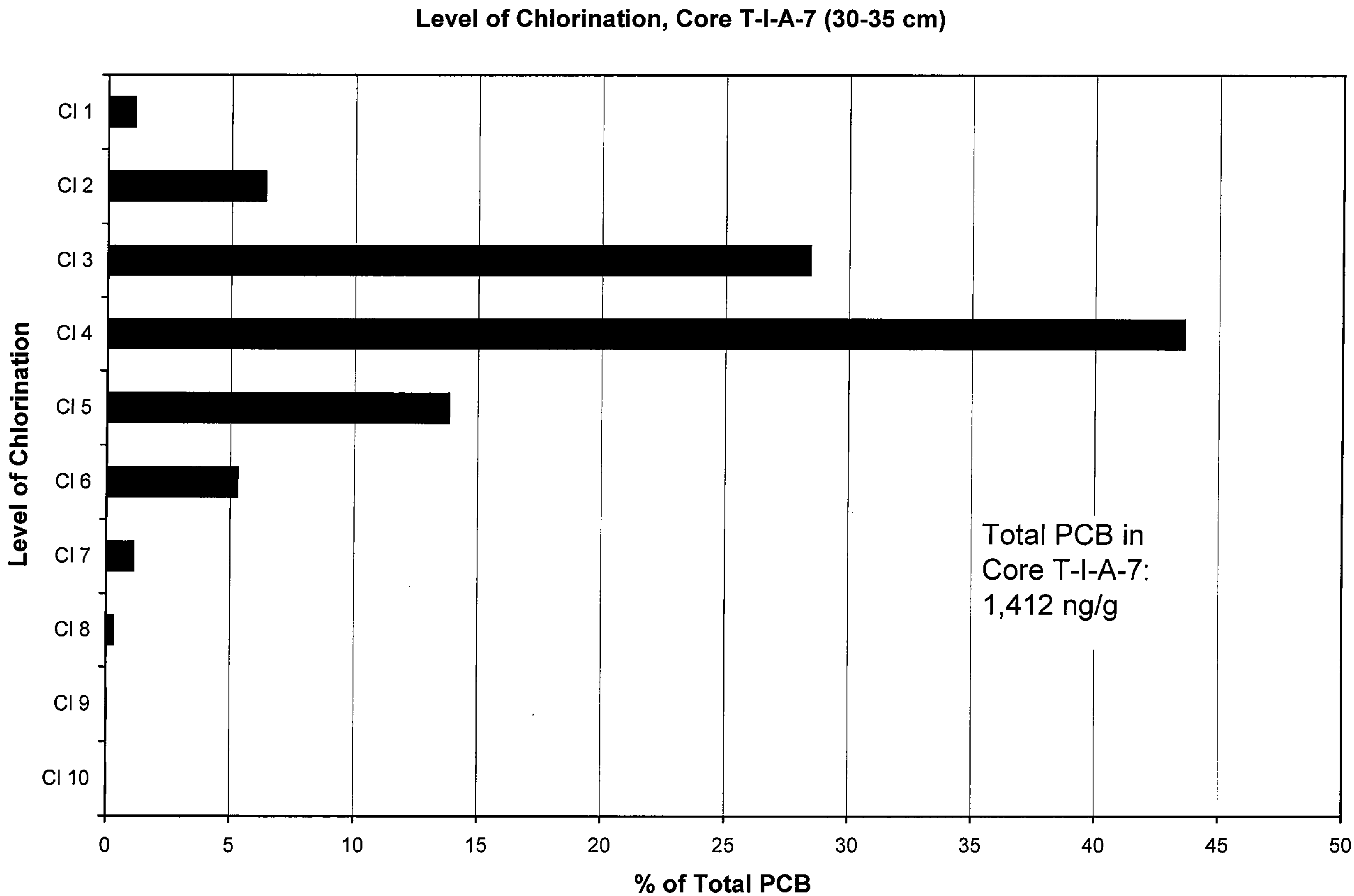
Level of Chlorination, Core T-I-A-3 (10-15 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core T-I-A-3:
12,691 ng/g

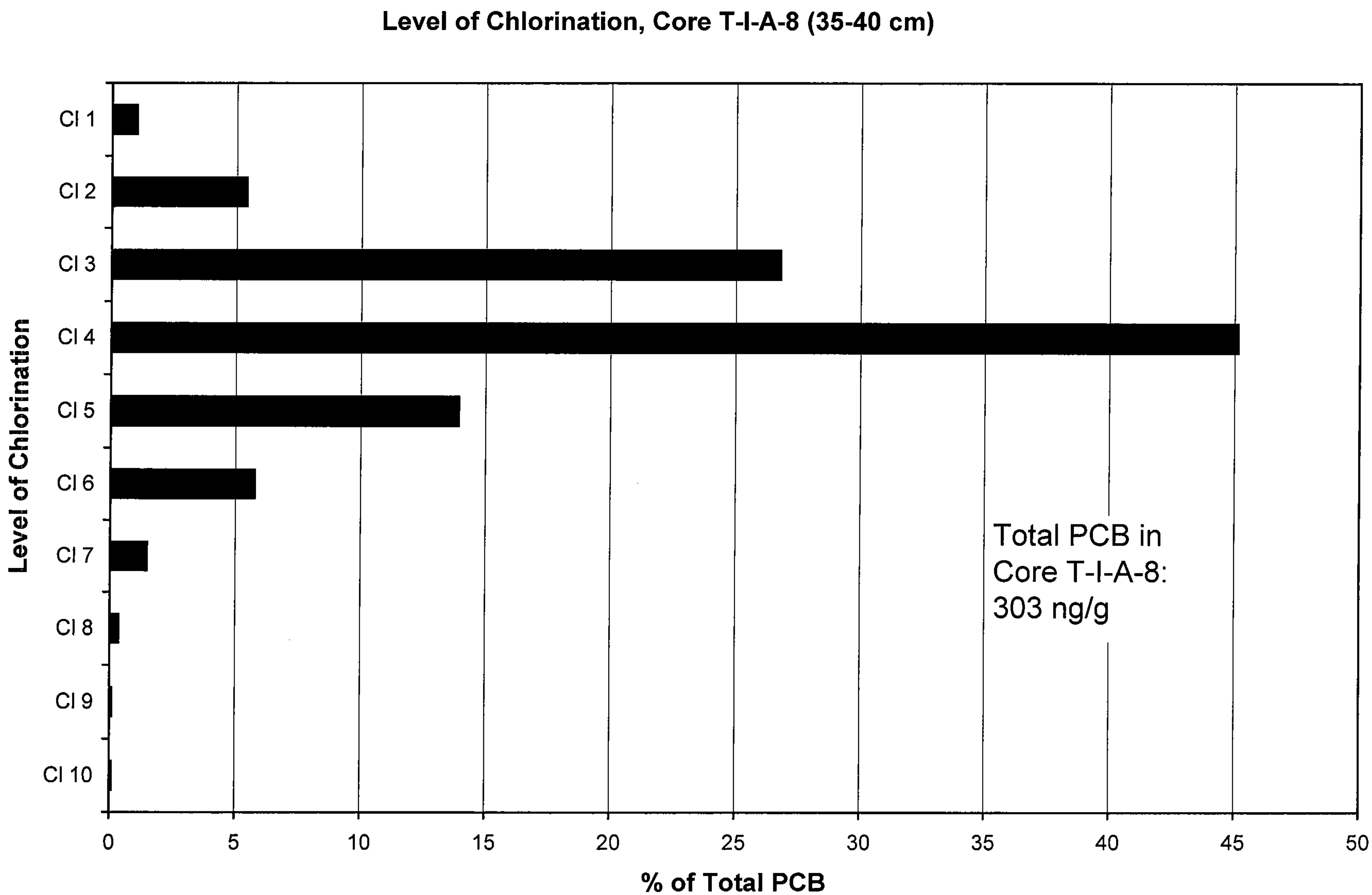

Level of Chlorination, Core T-I-A-4 (15-20 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core T-I-A-4:
19,274 ng/g


Level of Chlorination, Core T-I-A-5 (20-25 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
50
% of Total PCB
Total PCB in
Core T-I-A-5:
7,461 ng/g

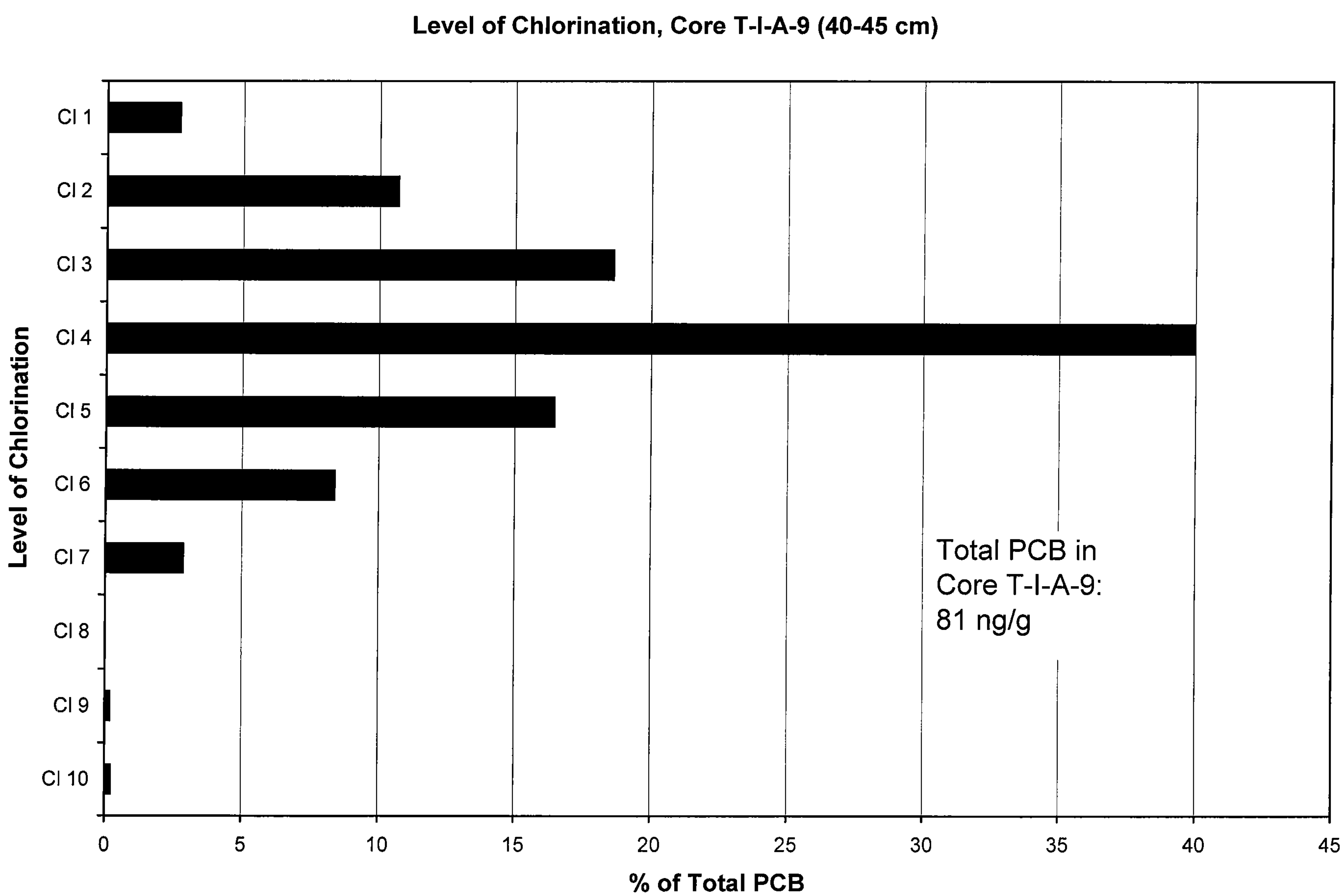


Level of Chlorination, Core T-I-A-6 (25-30 cm)
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Level of Chlorination
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core T-I-A-6:
1,887 ng/g

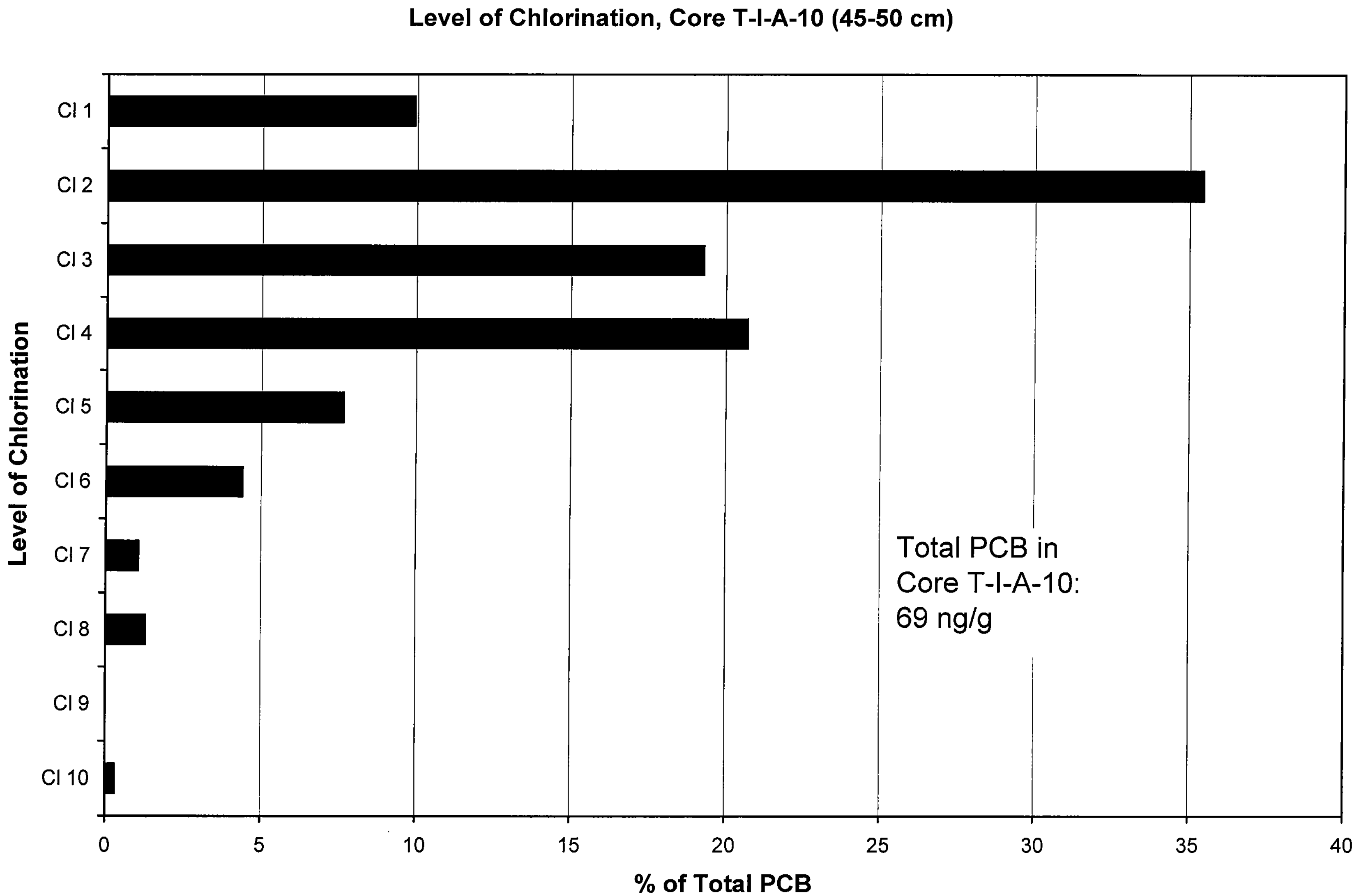

Level of Chlorination, Core T-I-A-7 (30-35 cm)
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Level of Chlorination
0
5
10
15
20
25
30
35
40
45
50
% of Total PCB
Total PCB in
Core T-I-A-7:
1,412 ng/g



Level of Chlorination, Core T-I-A-8 (35-40 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
50
% of Total PCB
Total PCB in
Core T-I-A-8:
303 ng/g

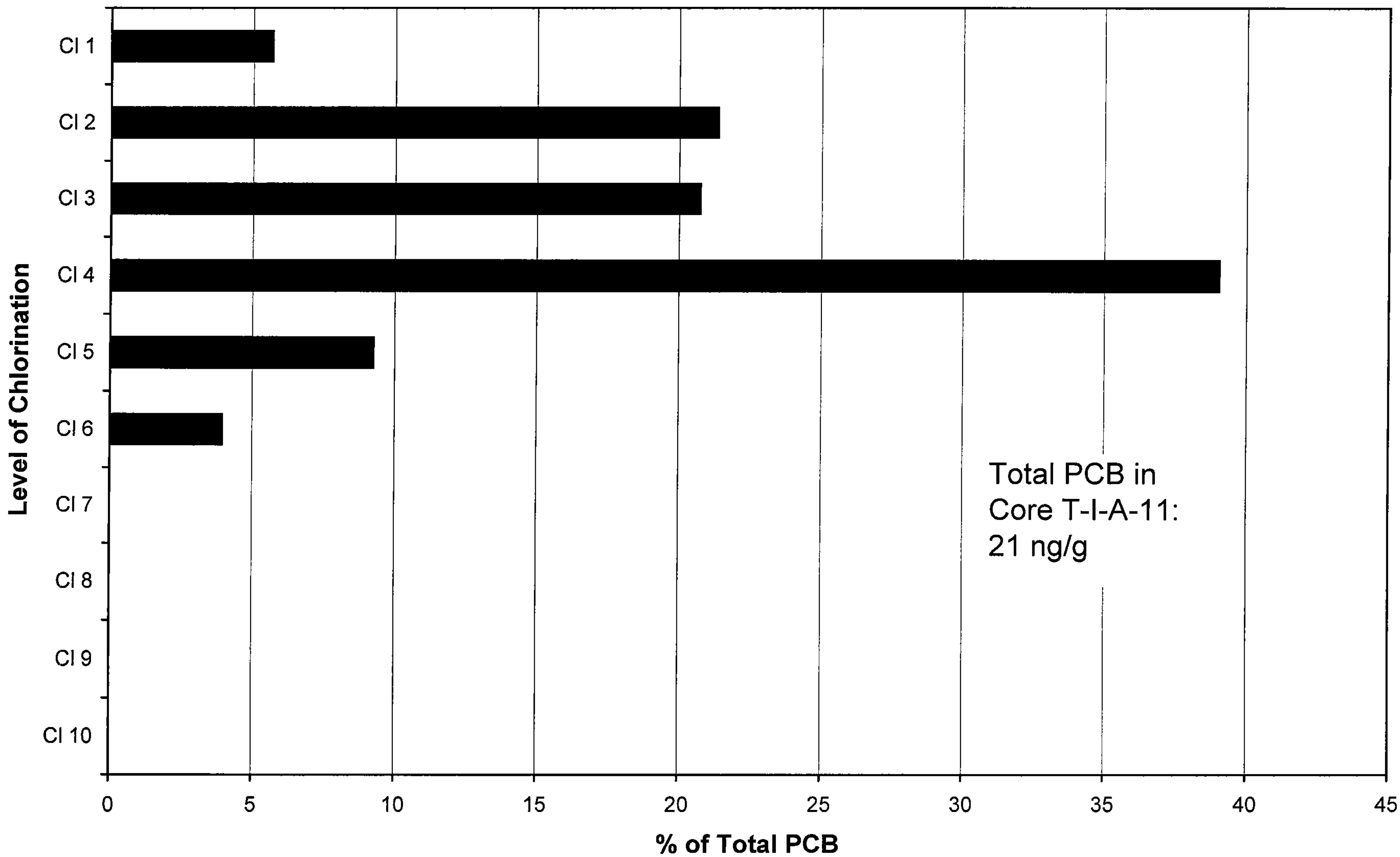


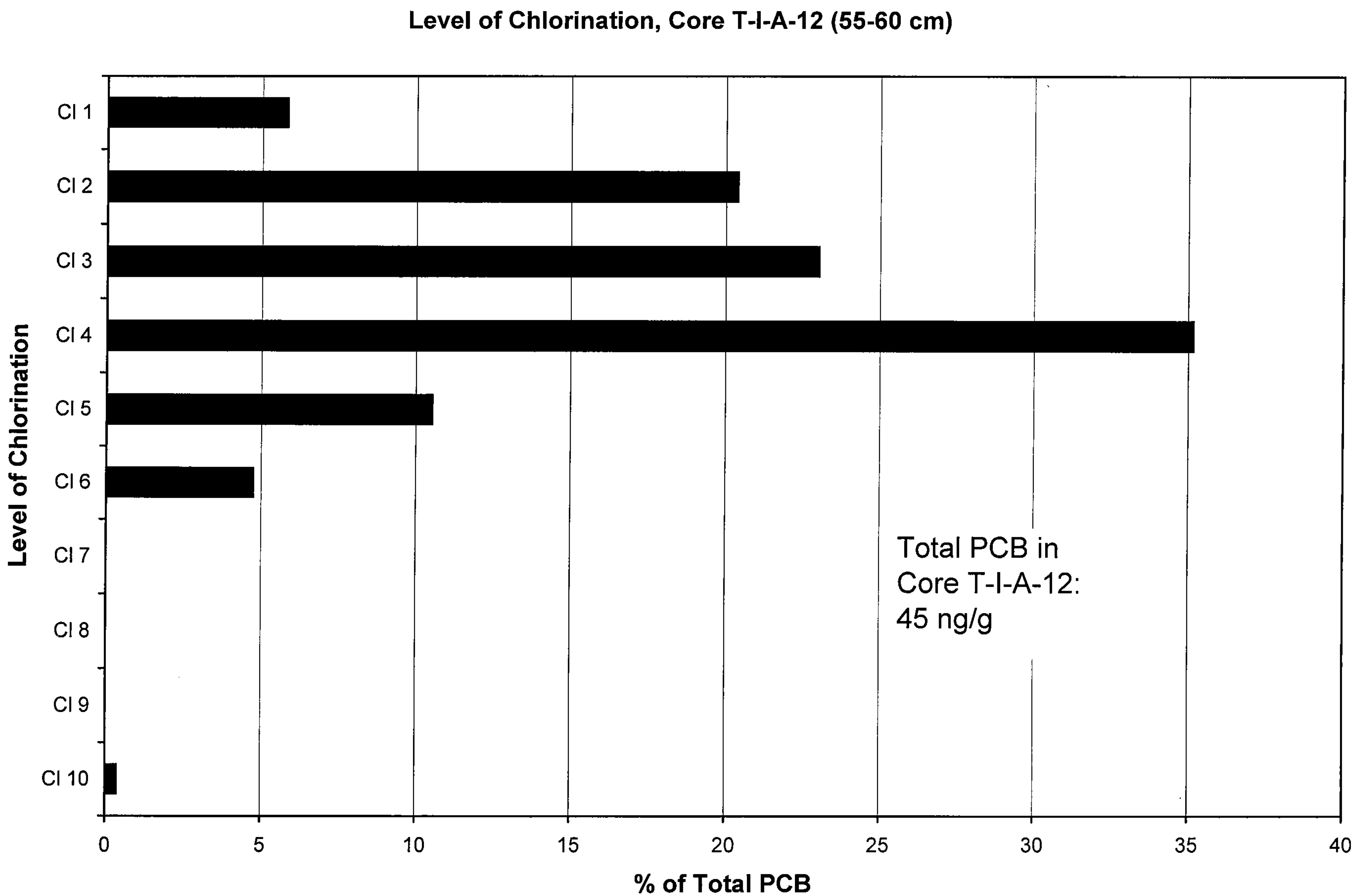
Level of Chlorination, Core T-I-A-9 (40-45 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core T-I-A-9:
81 ng/g



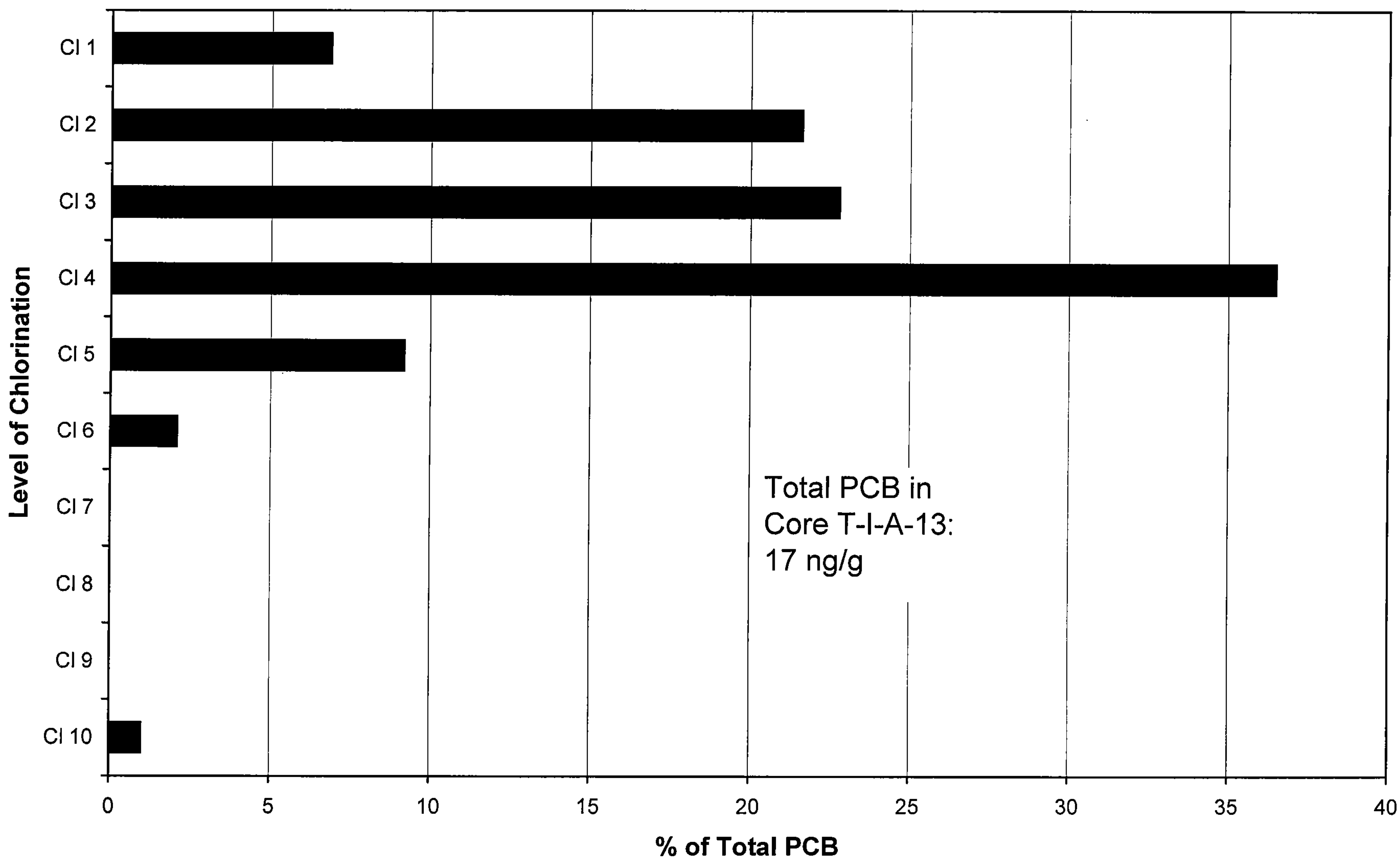
Level of Chlorination, Core T-I-A-10 (45-50 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in
Core T-I-A-10:
69 ng/g

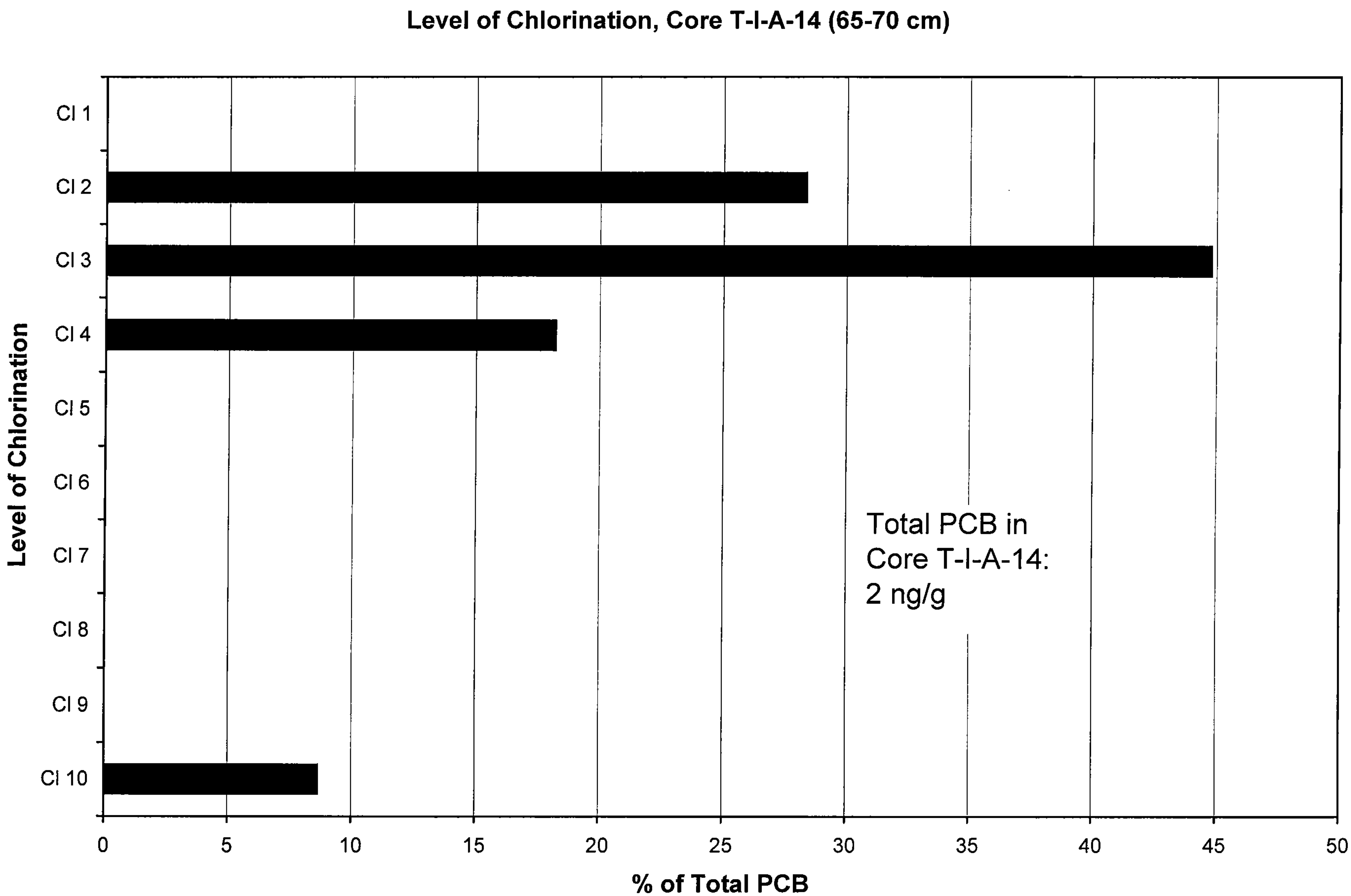
Level of Chlorination, Core T-I-A-11 (50-55 cm)



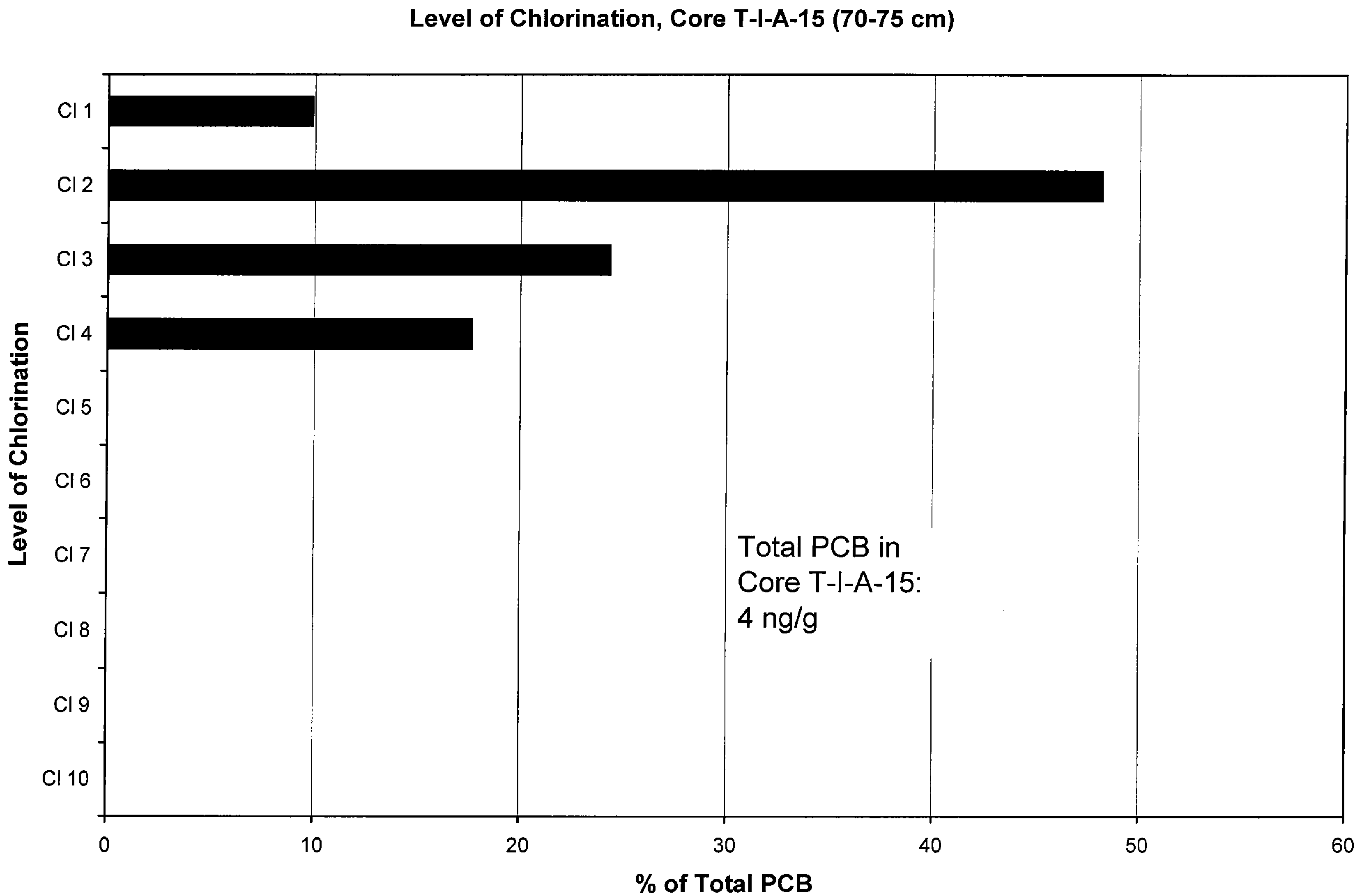

Level of Chlorination, Core T-I-A-12 (55-60 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in
Core T-I-A-12:
45 ng/g

Level of Chlorination, Core T-I-A-13 (60-65 cm)



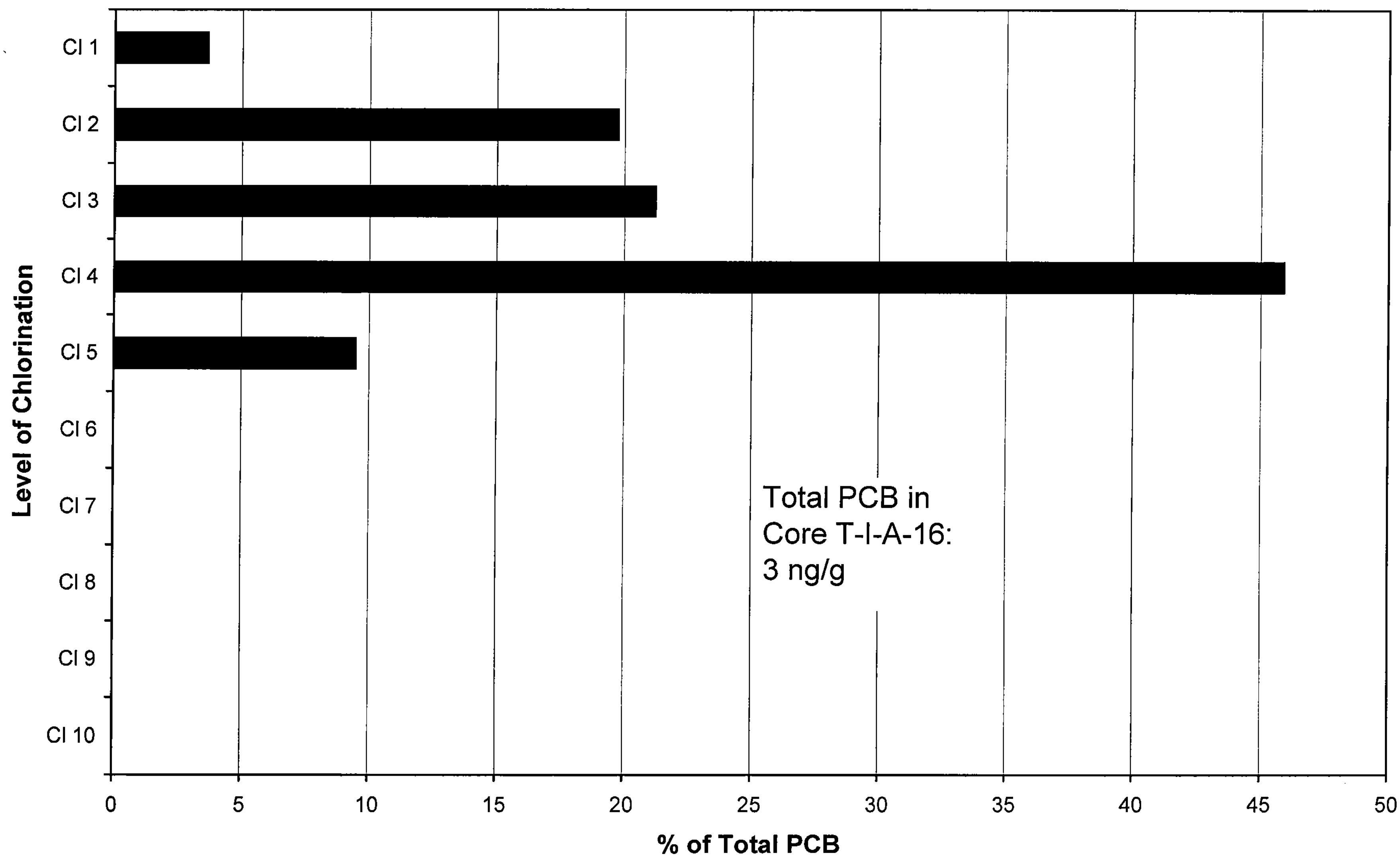


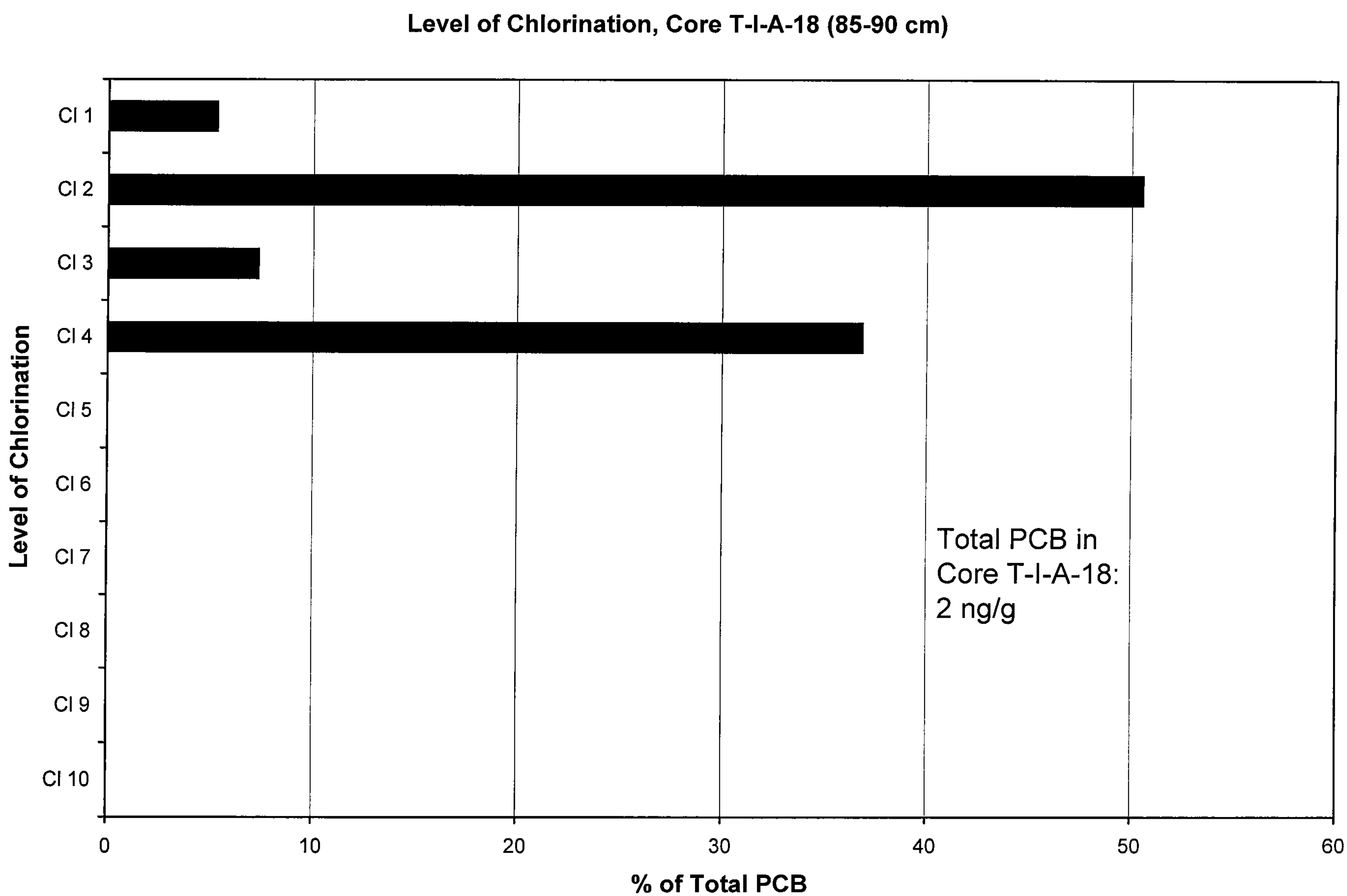
Level of Chlorination, Core T-I-A-14 (65-70 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
50
% of Total PCB
Total PCB in
Core T-I-A-14:
2 ng/g

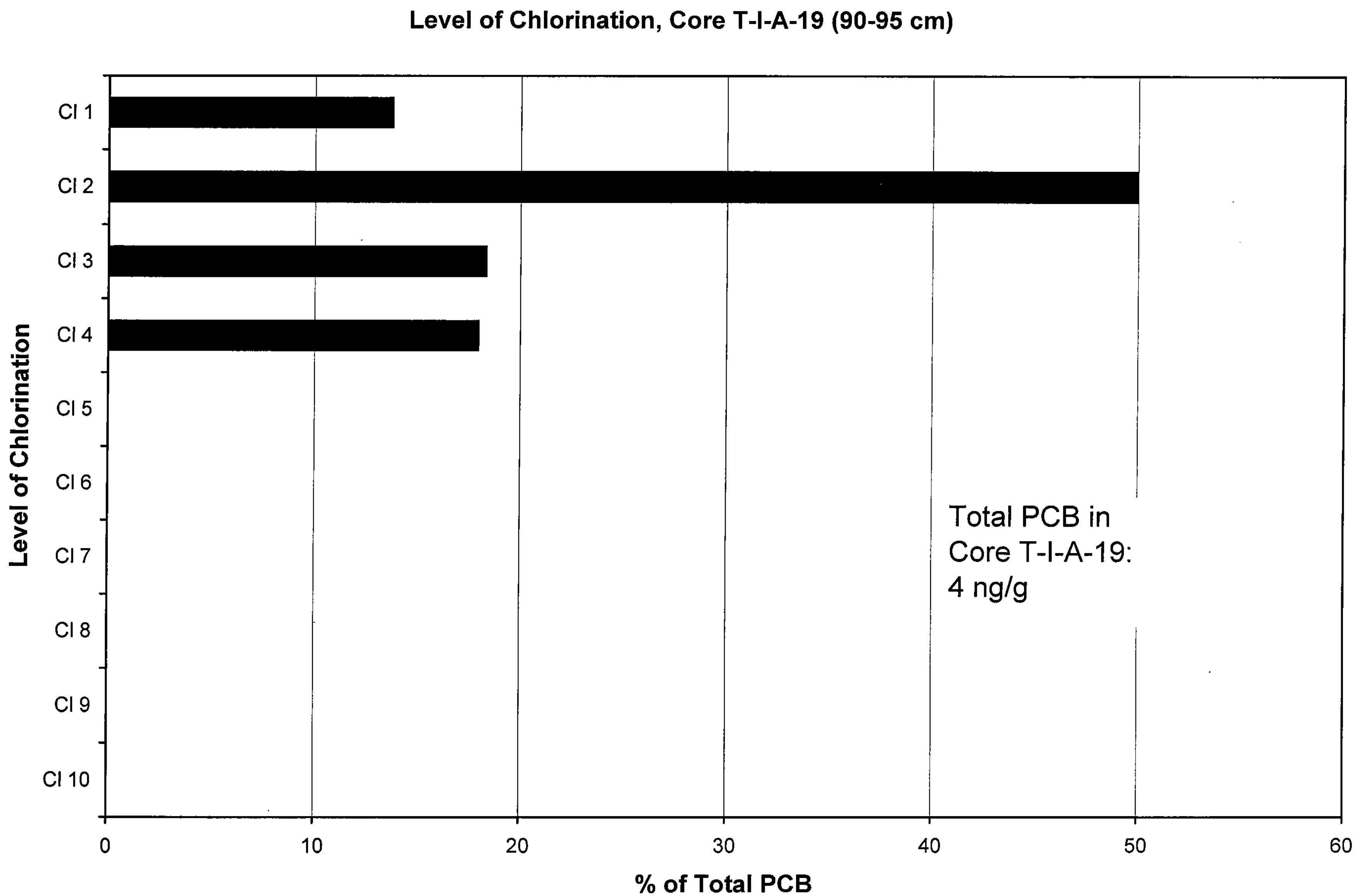


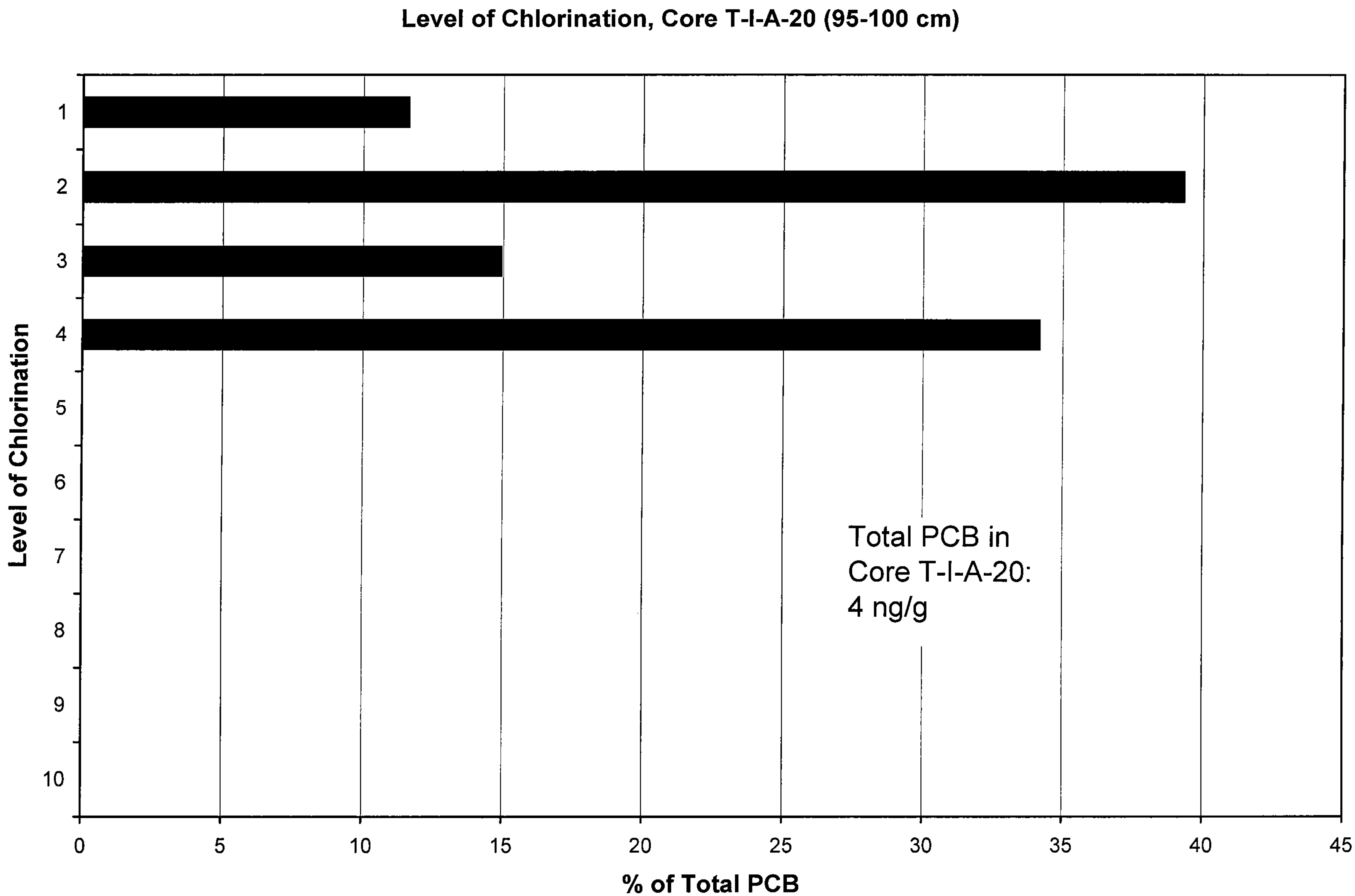
Level of Chlorination, Core T-I-A-15 (70-75 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
% of Total PCB
Total PCB in
Core T-I-A-15:
4 ng/g

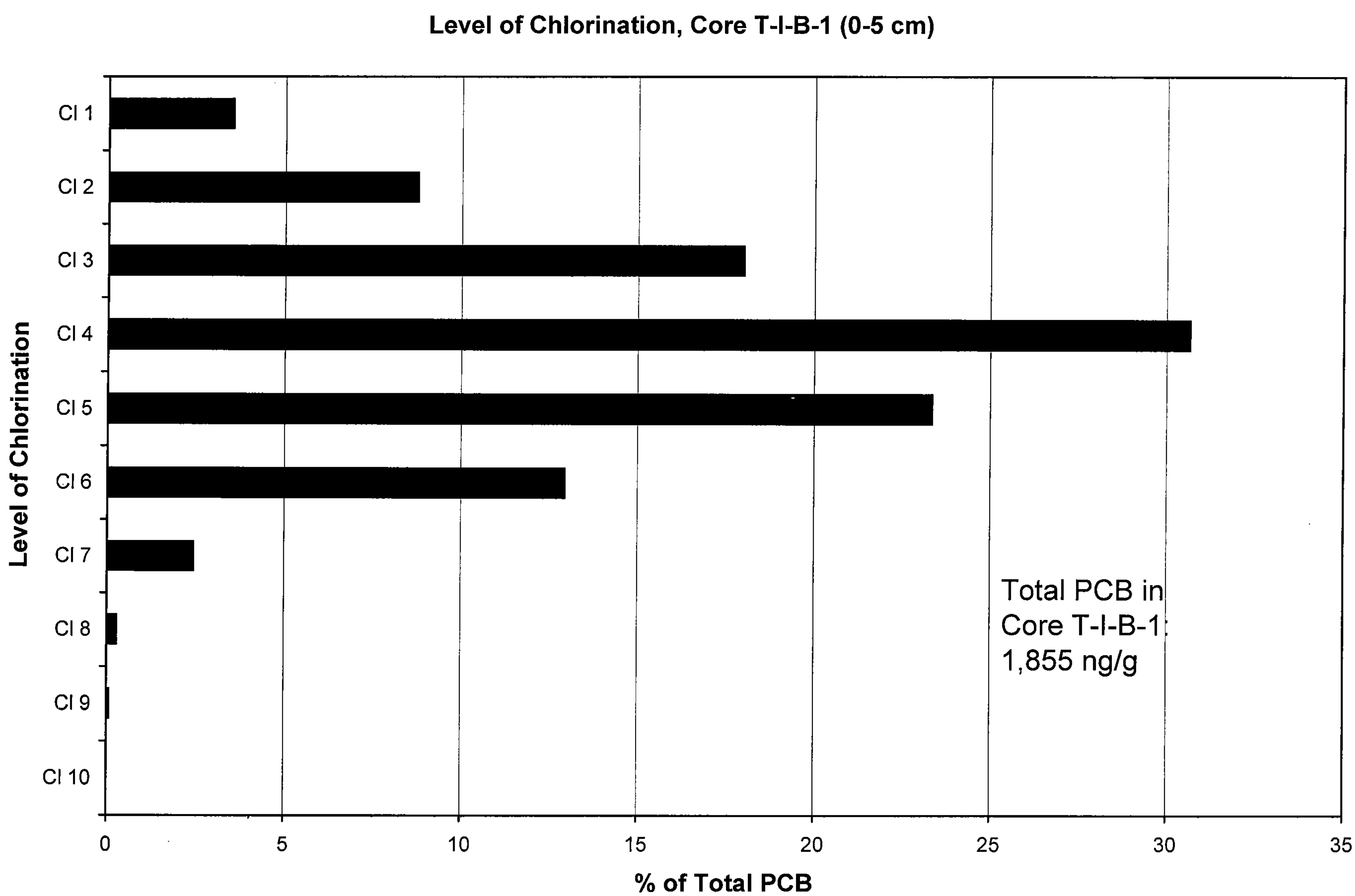
Level of Chlorination, Core T-I-A-16 (75-80 cm)



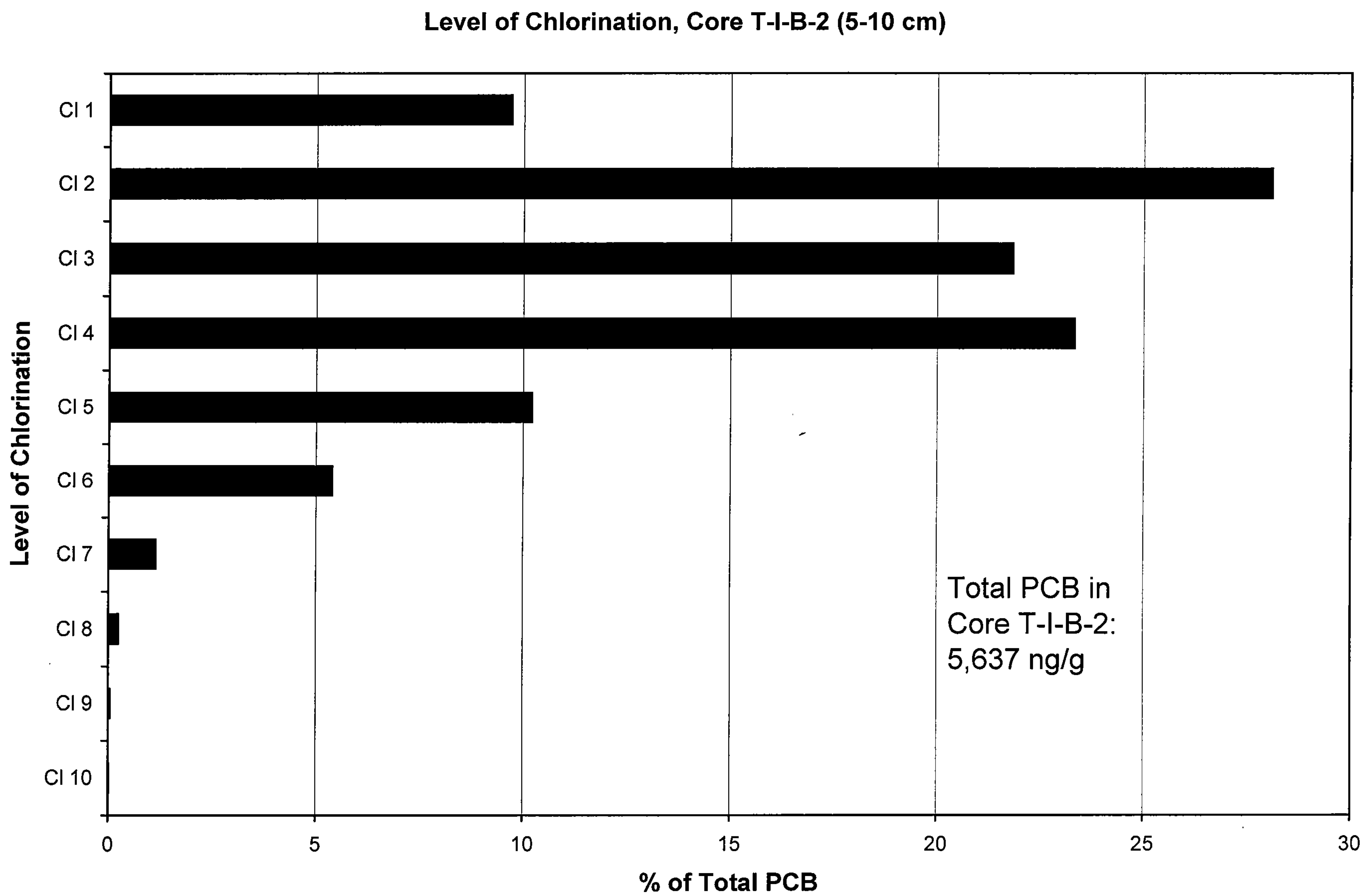

Level of Chlorination, Core T-I-A-18 (85-90 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
% of Total PCB
Total PCB in
Core T-I-A-18:
2 ng/g

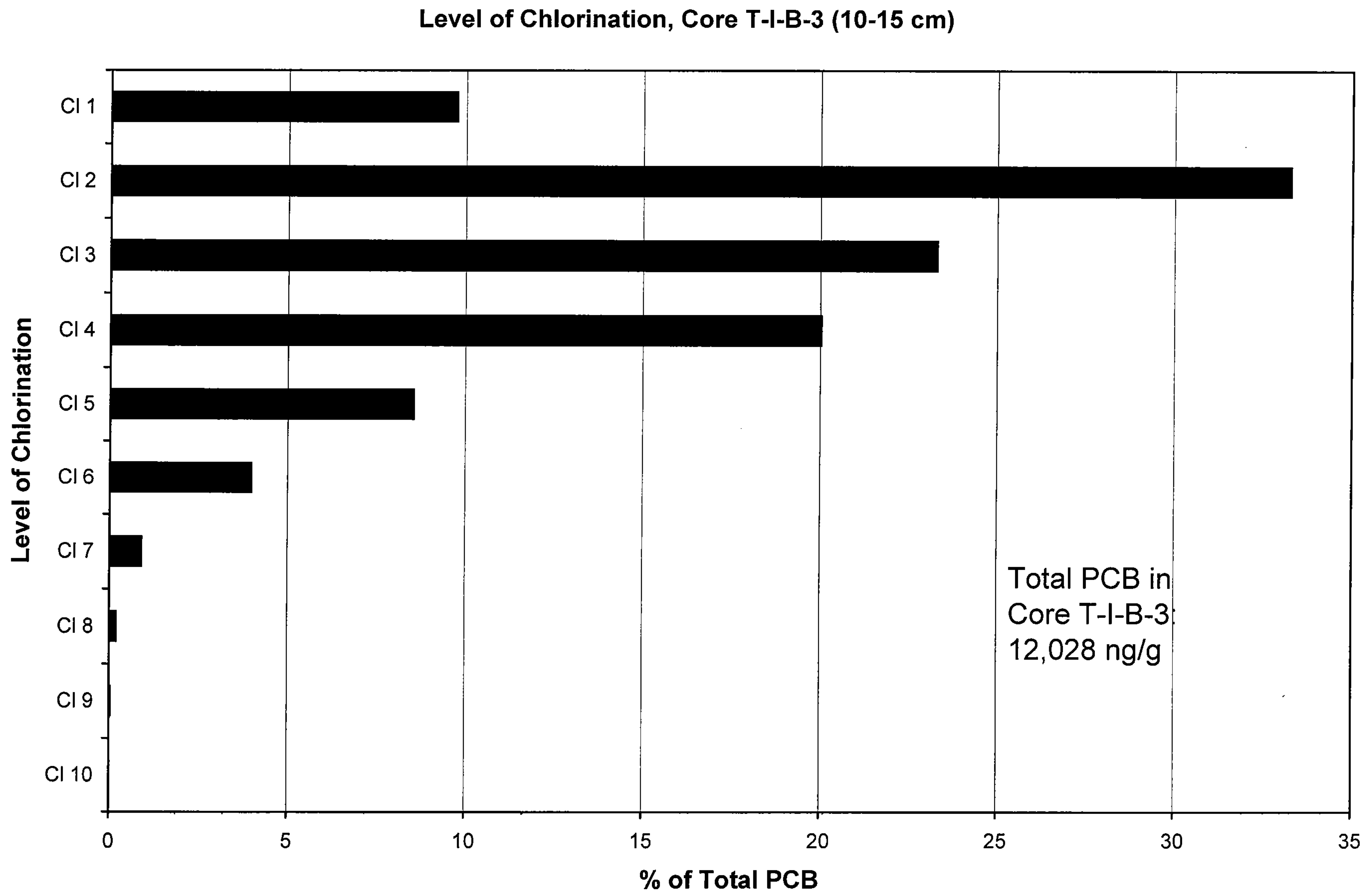

Level of Chlorination, Core T-I-A-19 (90-95 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
% of Total PCB
Total PCB in
Core T-I-A-19:
4 ng/g

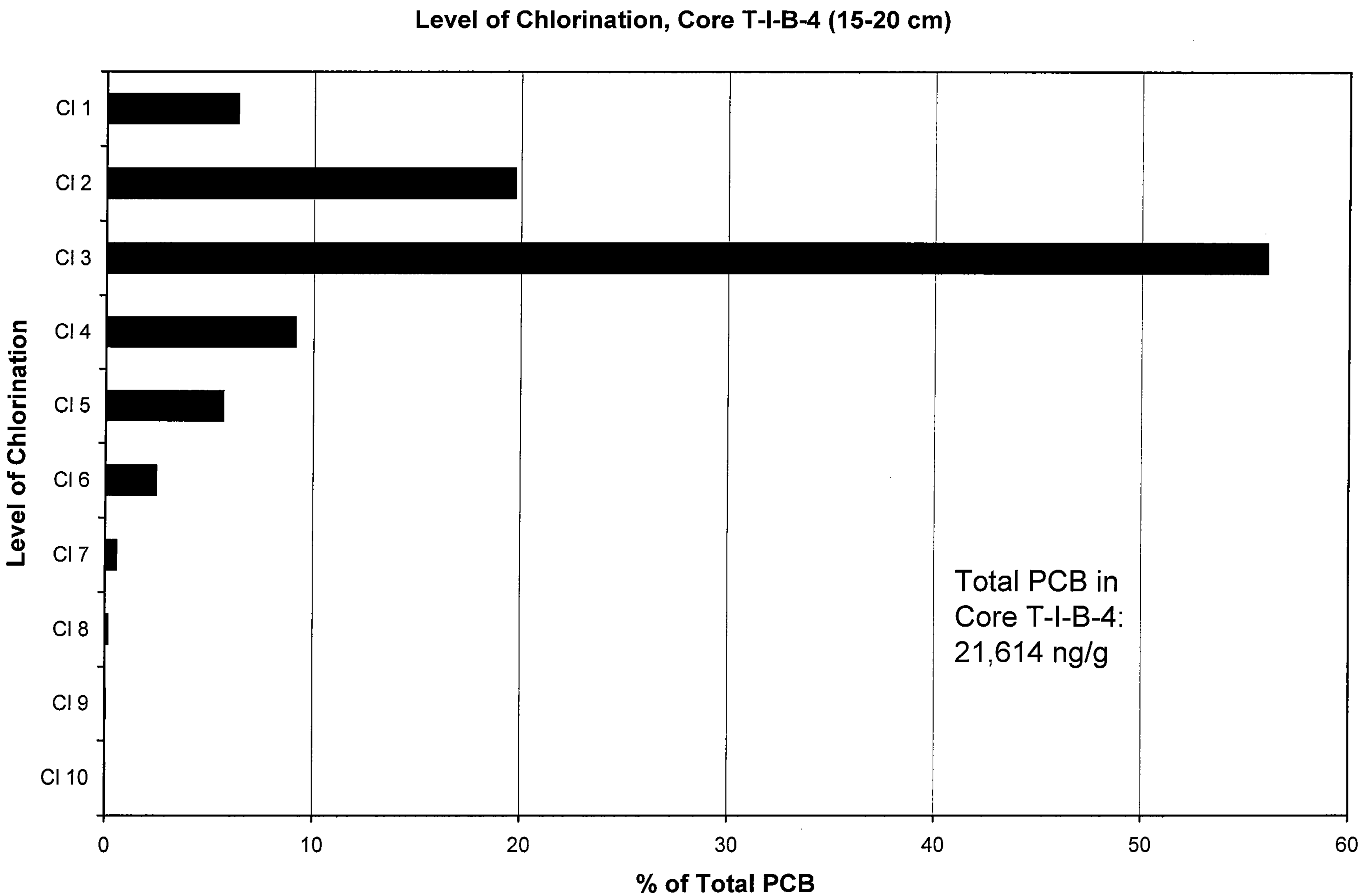

Level of Chlorination, Core T-I-A-20 (95-100 cm)
Level of Chlorination
1
2
3
4
5
6
7
8
9
10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core T-I-A-20:
4 ng/g

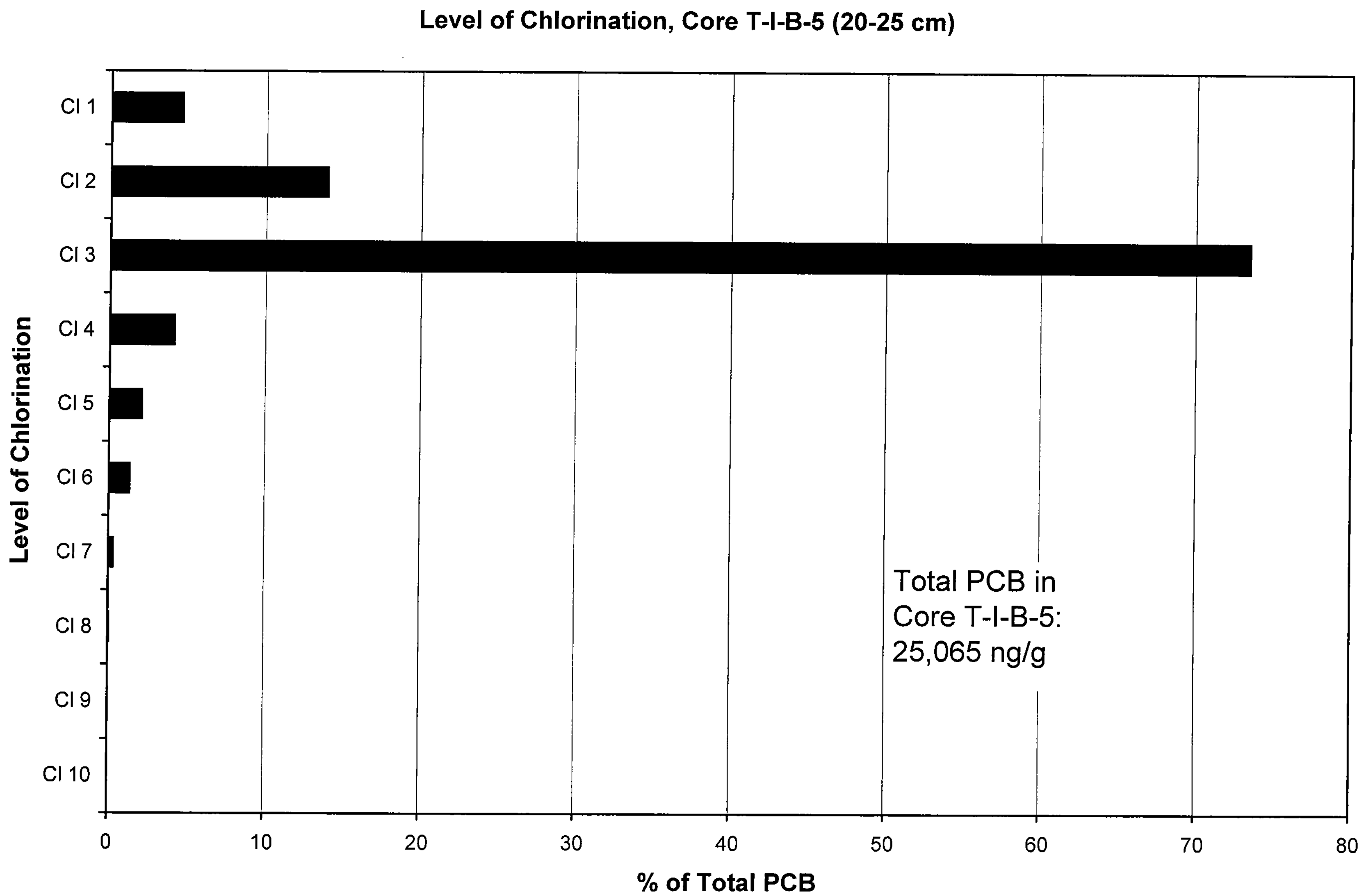


Level of Chlorination, Core T-I-B-1 (0-5 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core T-I-B-1:
1,855 ng/g

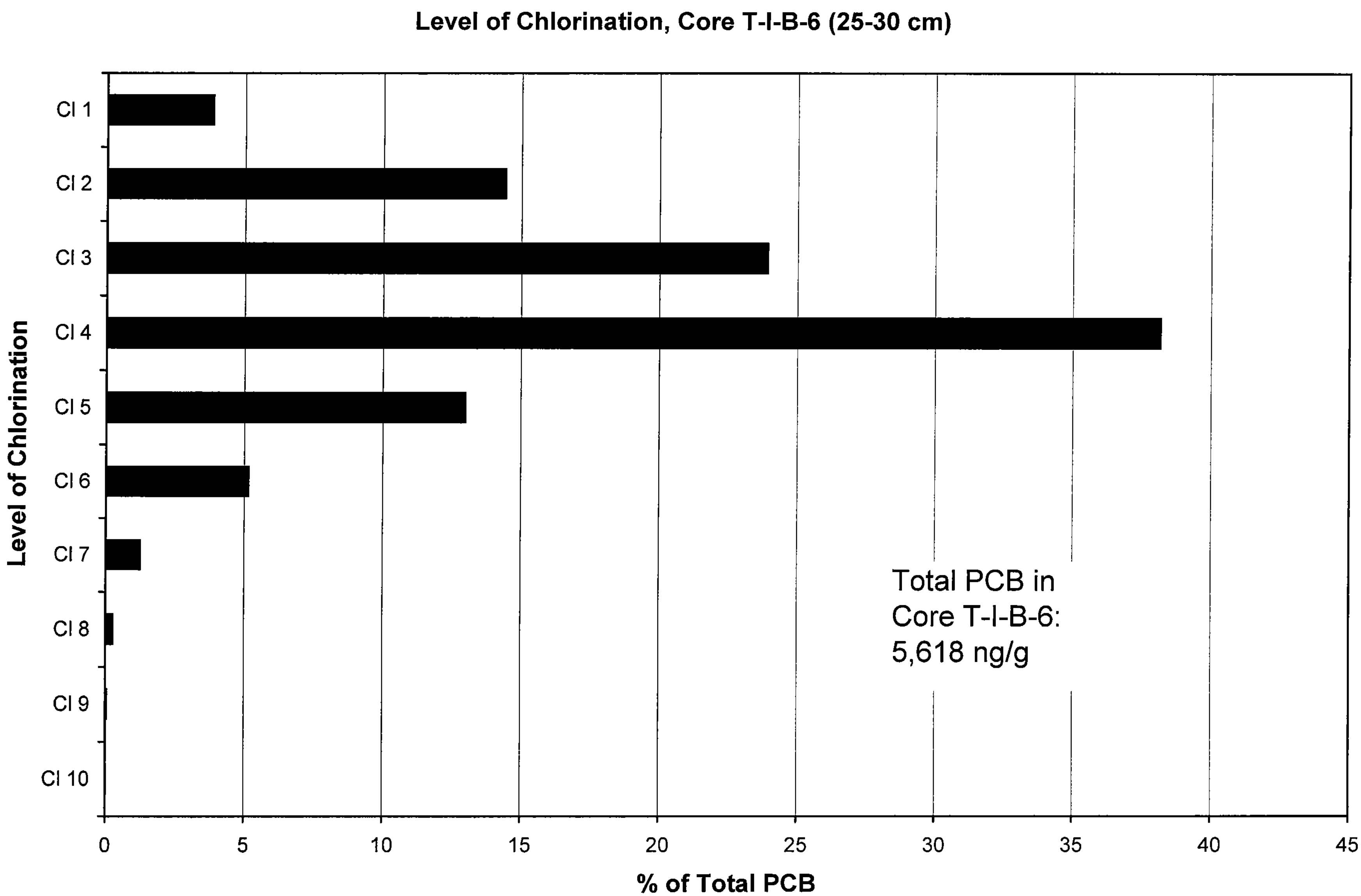

Level of Chlorination, Core T-I-B-2 (5-10 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
% of Total PCB
Total PCB in
Core T-I-B-2:
5,637 ng/g

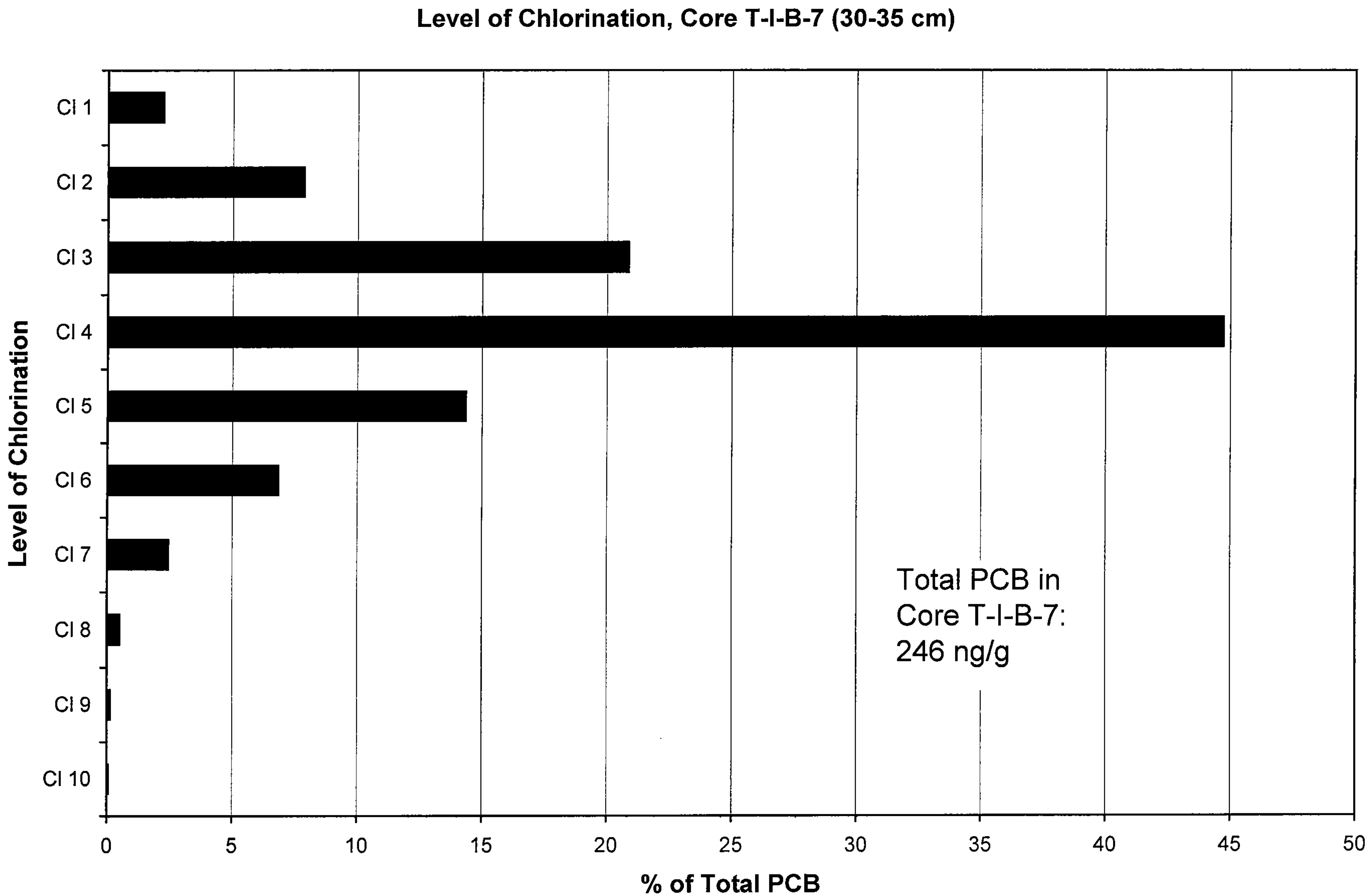

Level of Chlorination, Core T-I-B-3 (10-15 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core T-I-B-3:
12,028 ng/g

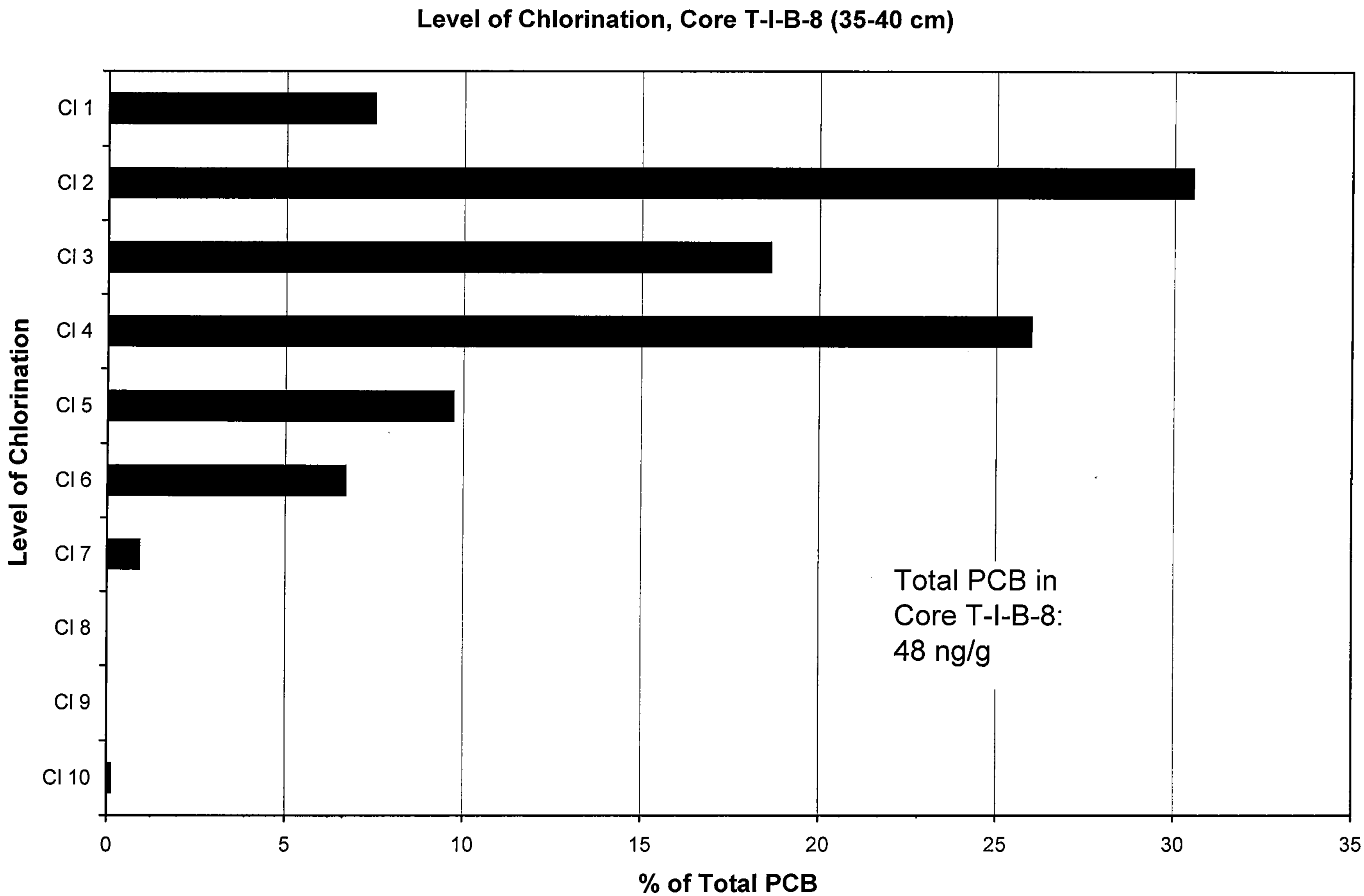

Level of Chlorination, Core T-I-B-4 (15-20 cm)
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Level of Chlorination
0
10
20
30
40
50
60
% of Total PCB
Total PCB in
Core T-I-B-4:
21,614 ng/g

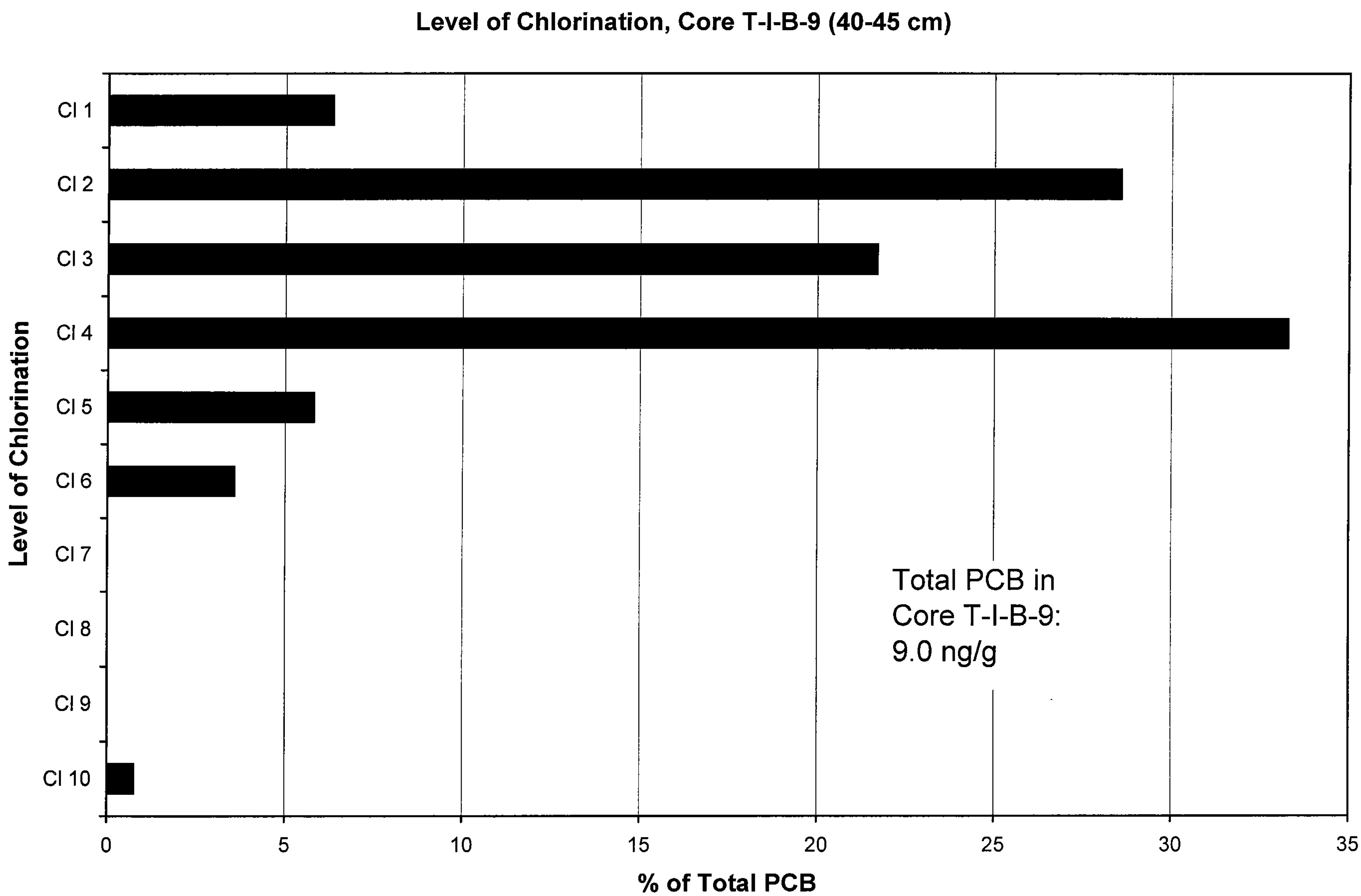


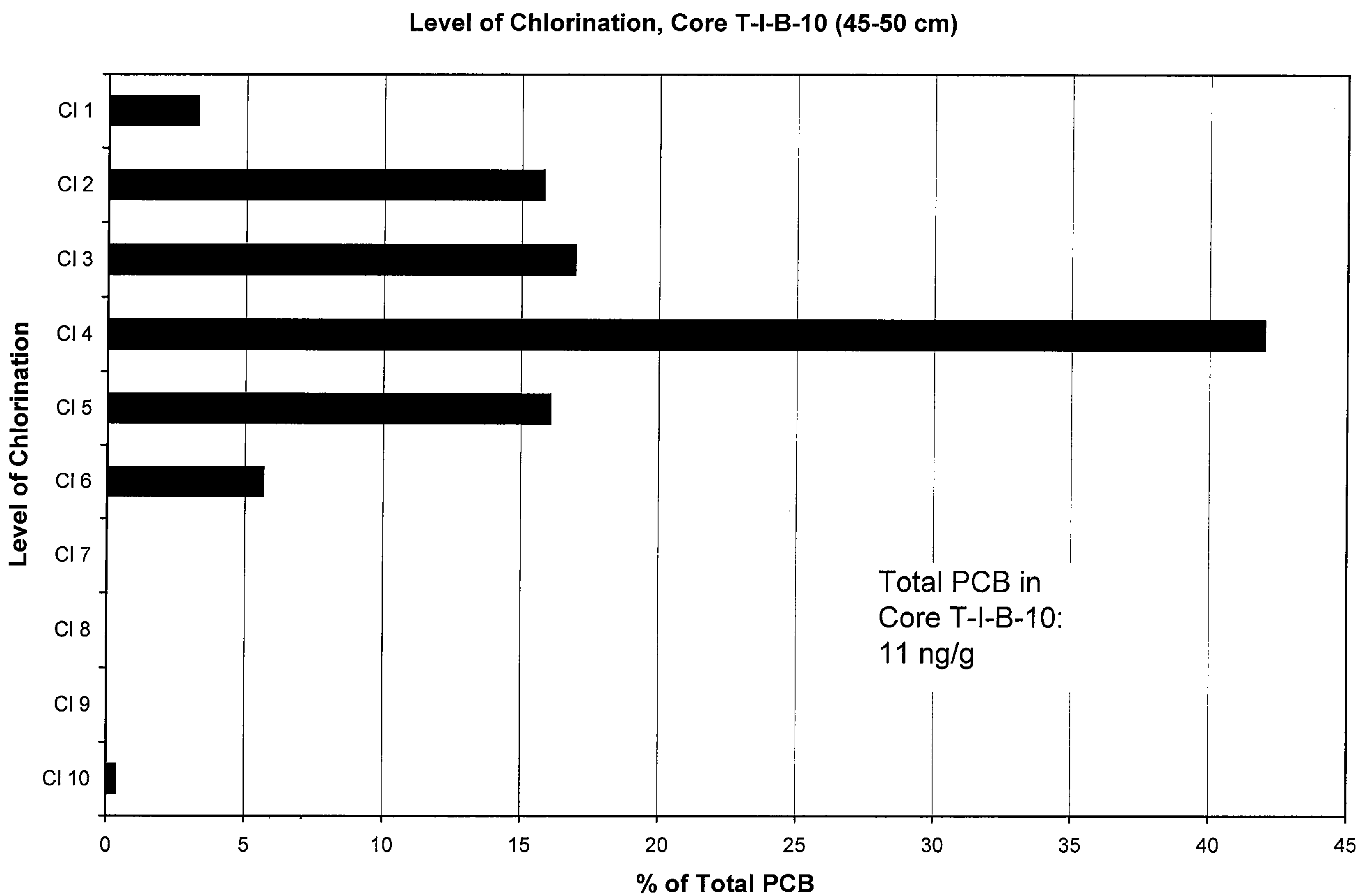
Level of Chlorination, Core T-I-B-5 (20-25 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
70
80
% of Total PCB
Total PCB in
Core T-I-B-5:
25,065 ng/g

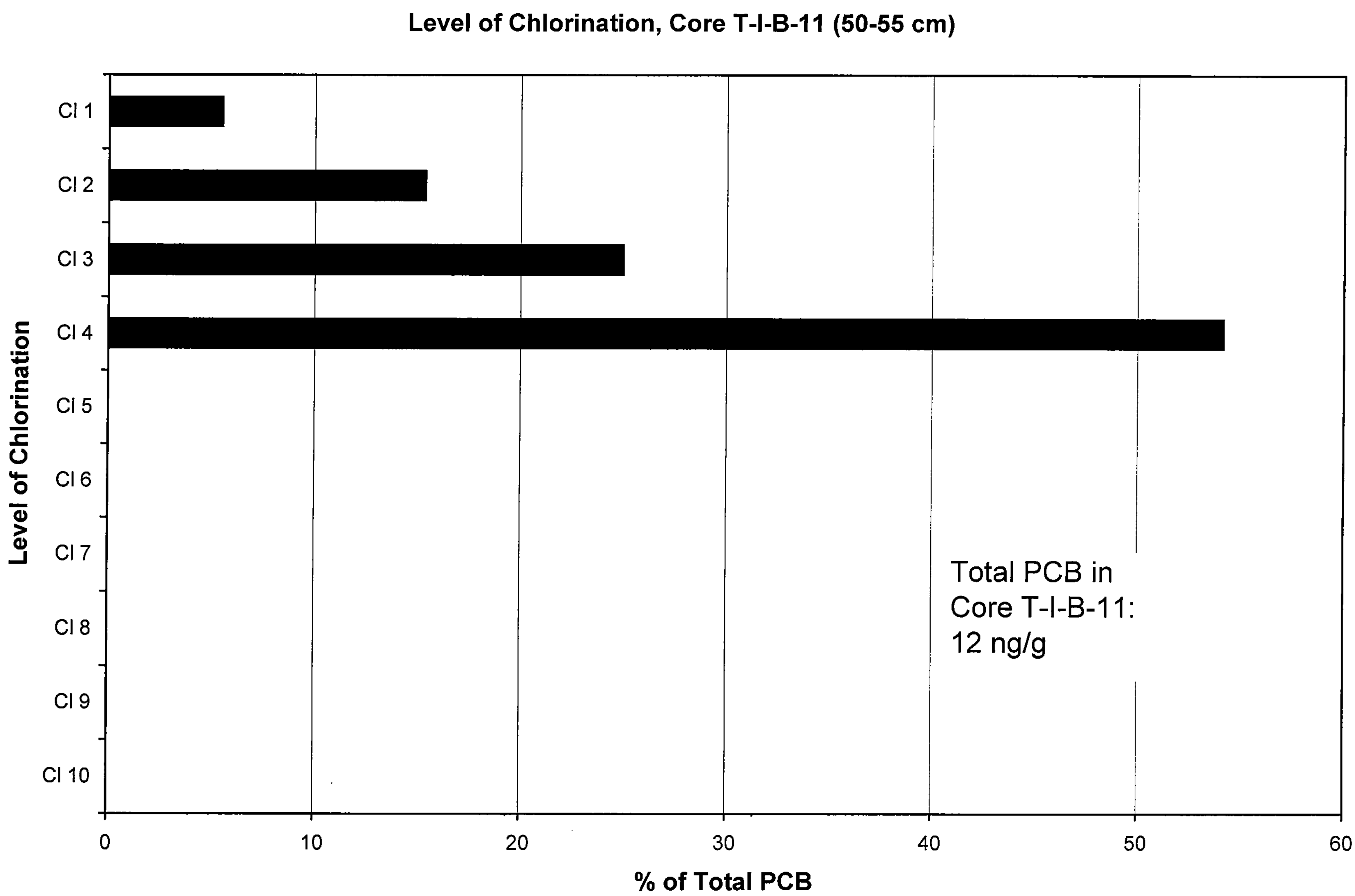

Level of Chlorination, Core T-I-B-6 (25-30 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core T-I-B-6:
5,618 ng/g

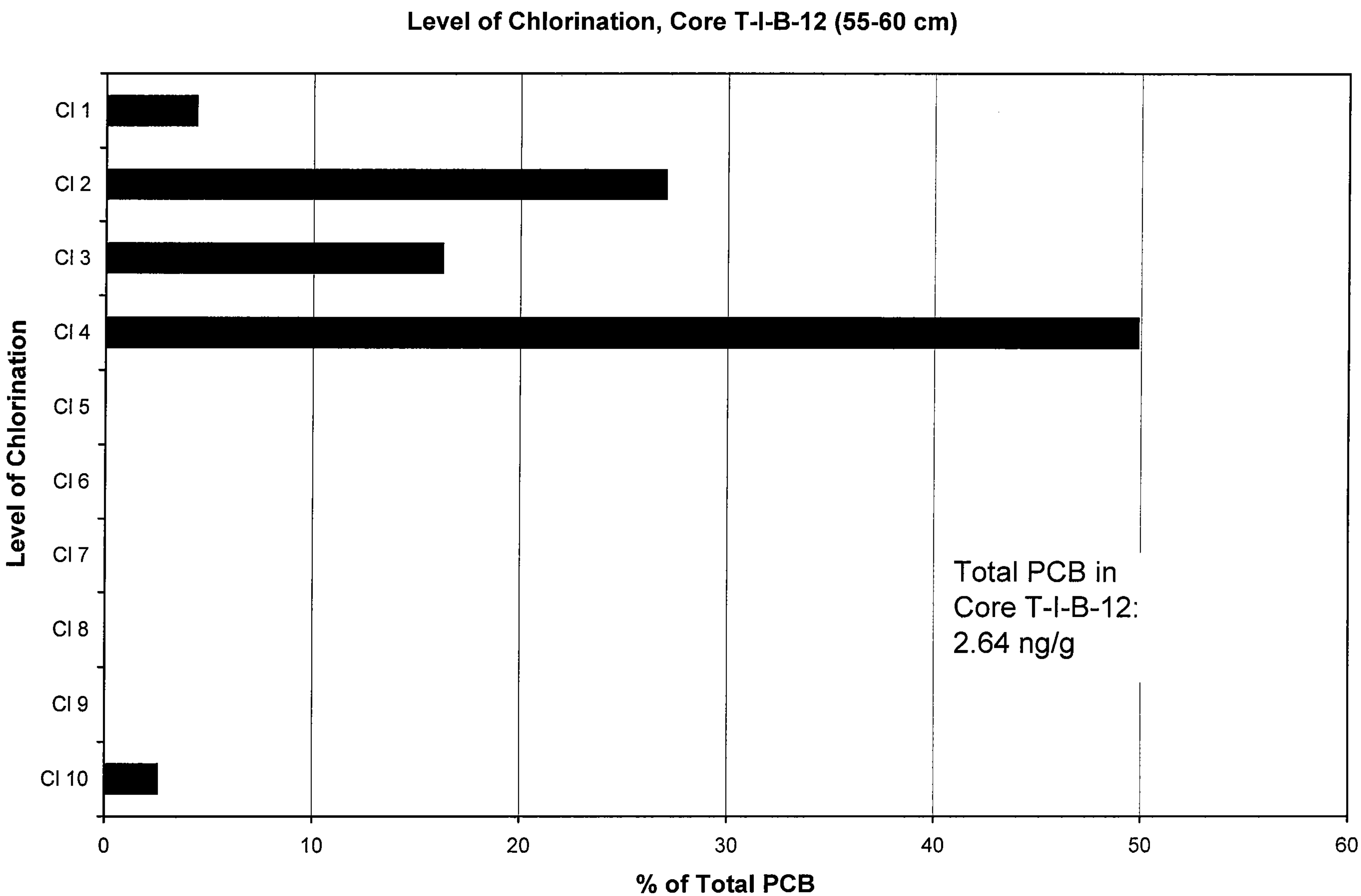

Level of Chlorination, Core T-I-B-7 (30-35 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
50
% of Total PCB
Total PCB in
Core T-I-B-7:
246 ng/g


Level of Chlorination, Core T-I-B-8 (35-40 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core T-I-B-8:
48 ng/g


Level of Chlorination, Core T-I-B-9 (40-45 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in Core T-I-B-9: 9.0 ng/g

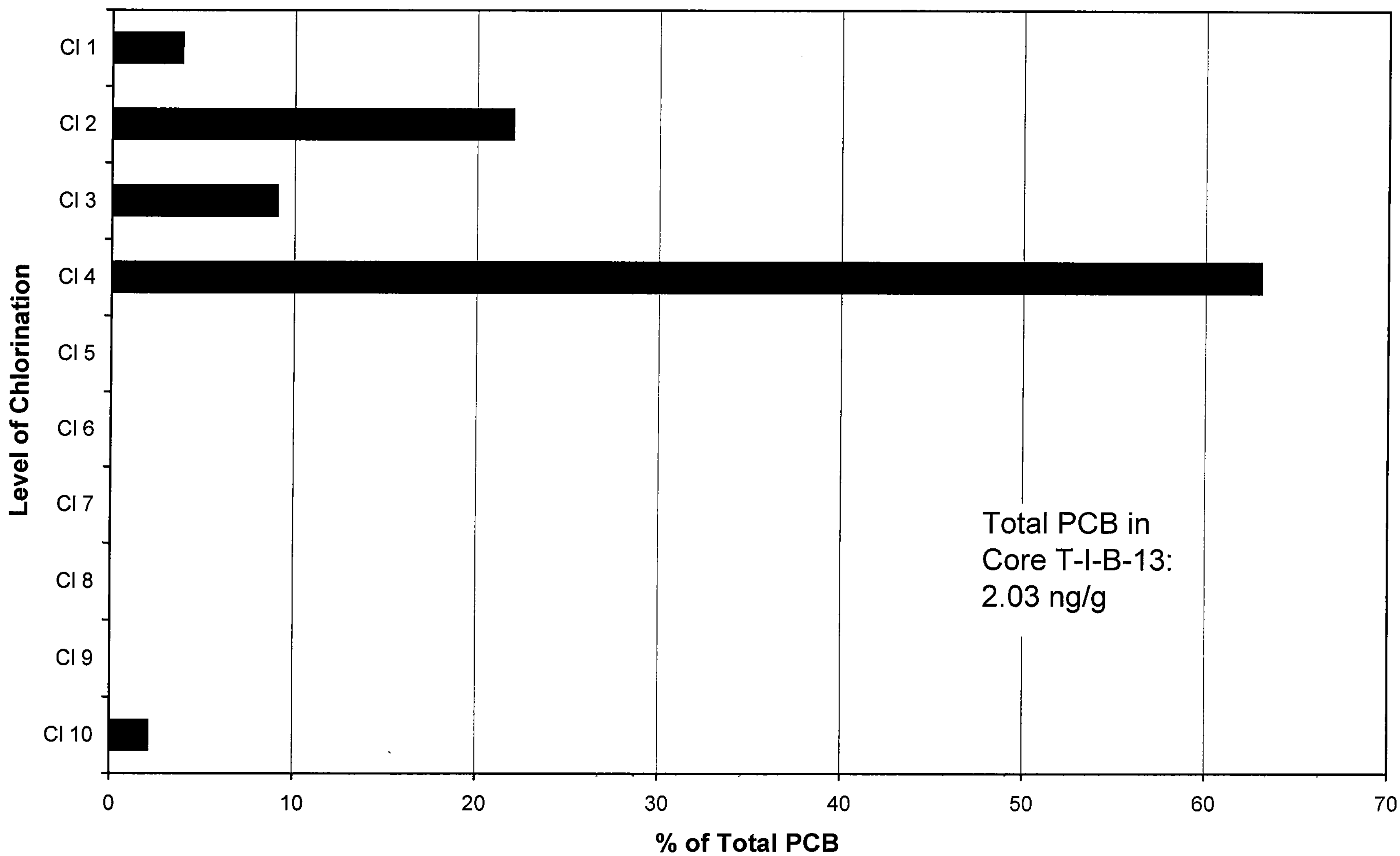

Level of Chlorination, Core T-I-B-10 (45-50 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core T-I-B-10:
11 ng/g

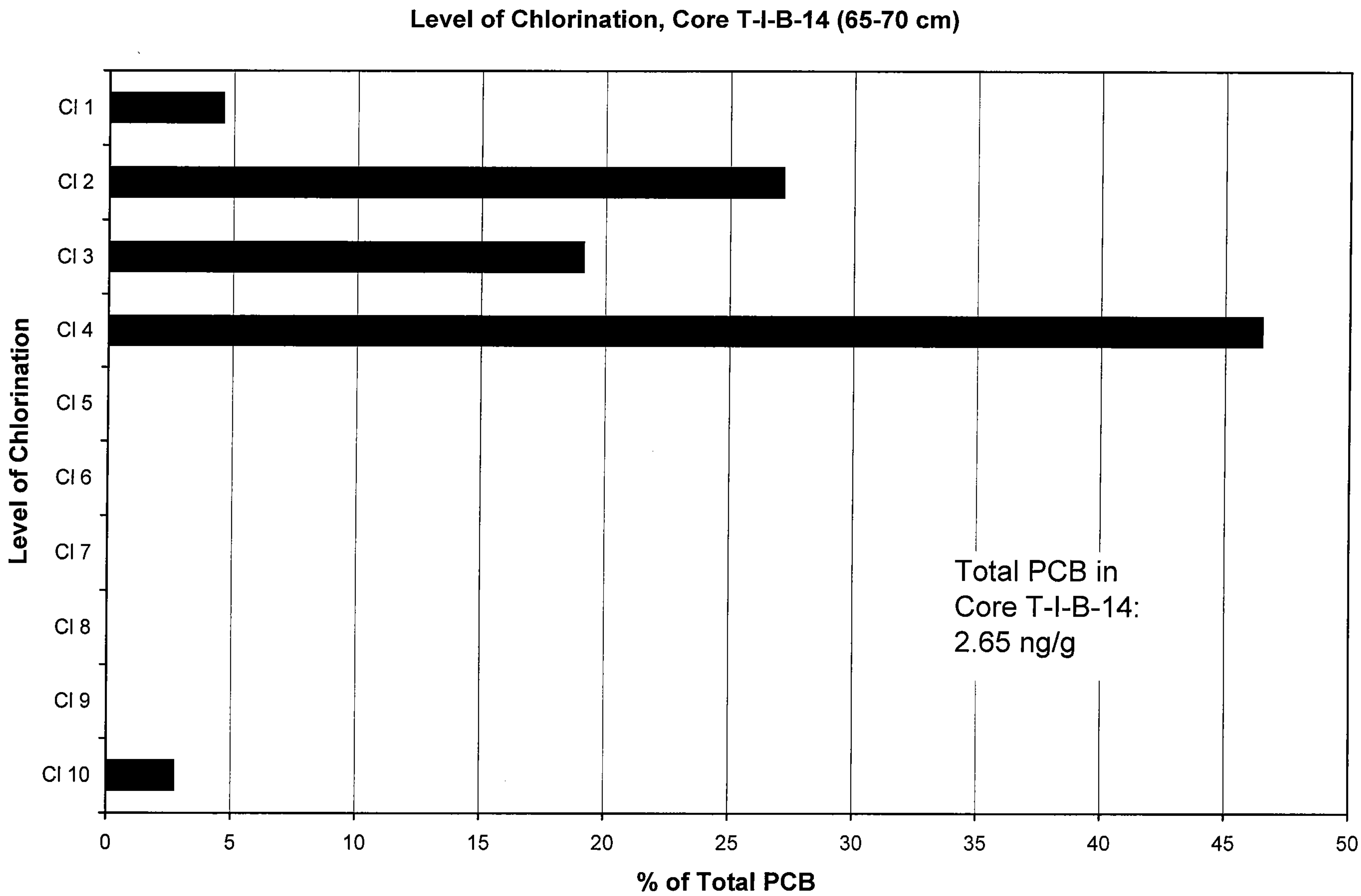

Level of Chlorination, Core T-I-B-11 (50-55 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
% of Total PCB
Total PCB in
Core T-I-B-11:
12 ng/g



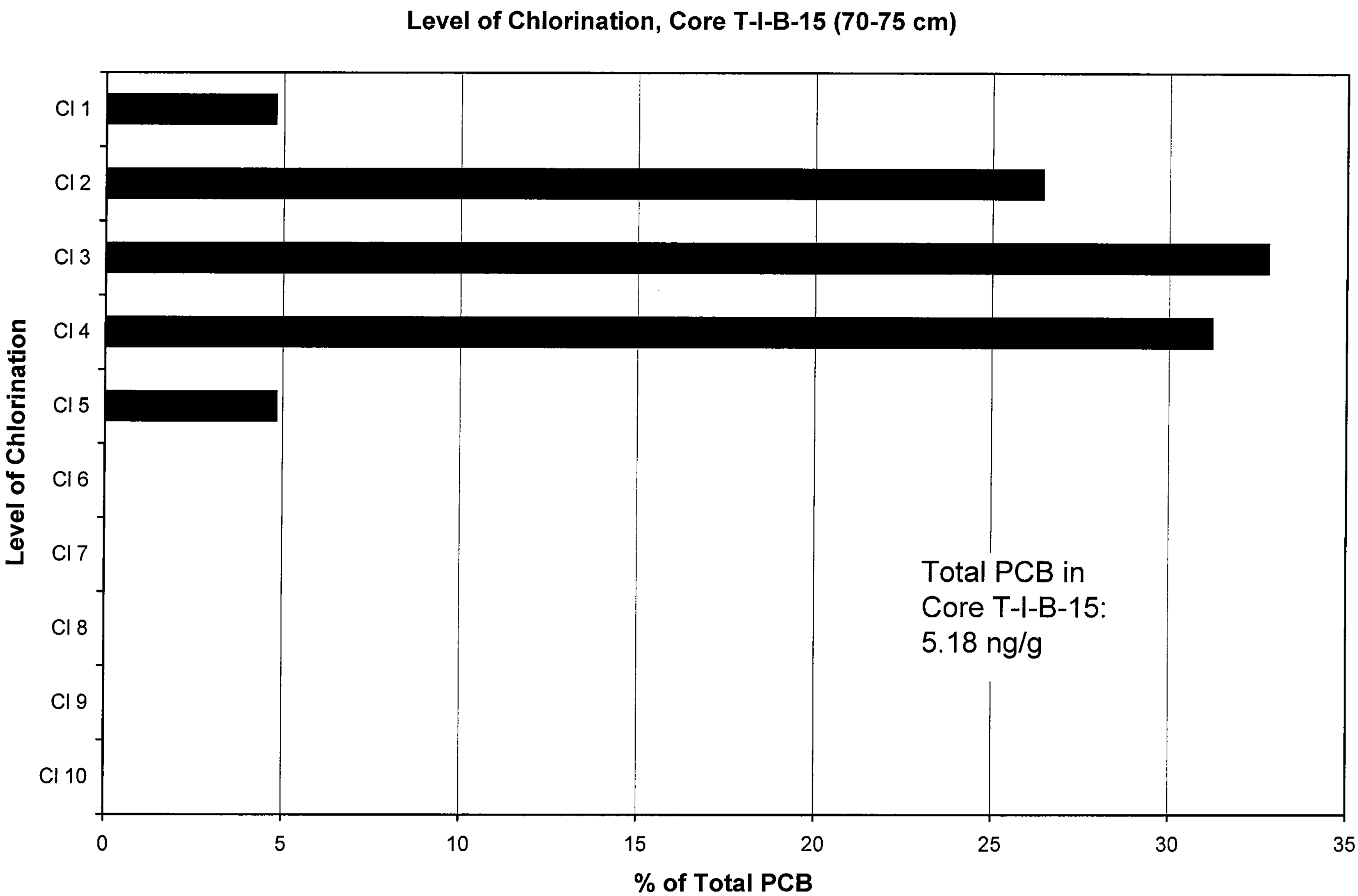
Level of Chlorination, Core T-I-B-12 (55-60 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
% of Total PCB
Total PCB in
Core T-I-B-12:
2.64 ng/g

Level of Chlorination, Core T-I-B-13 (60-65 cm)

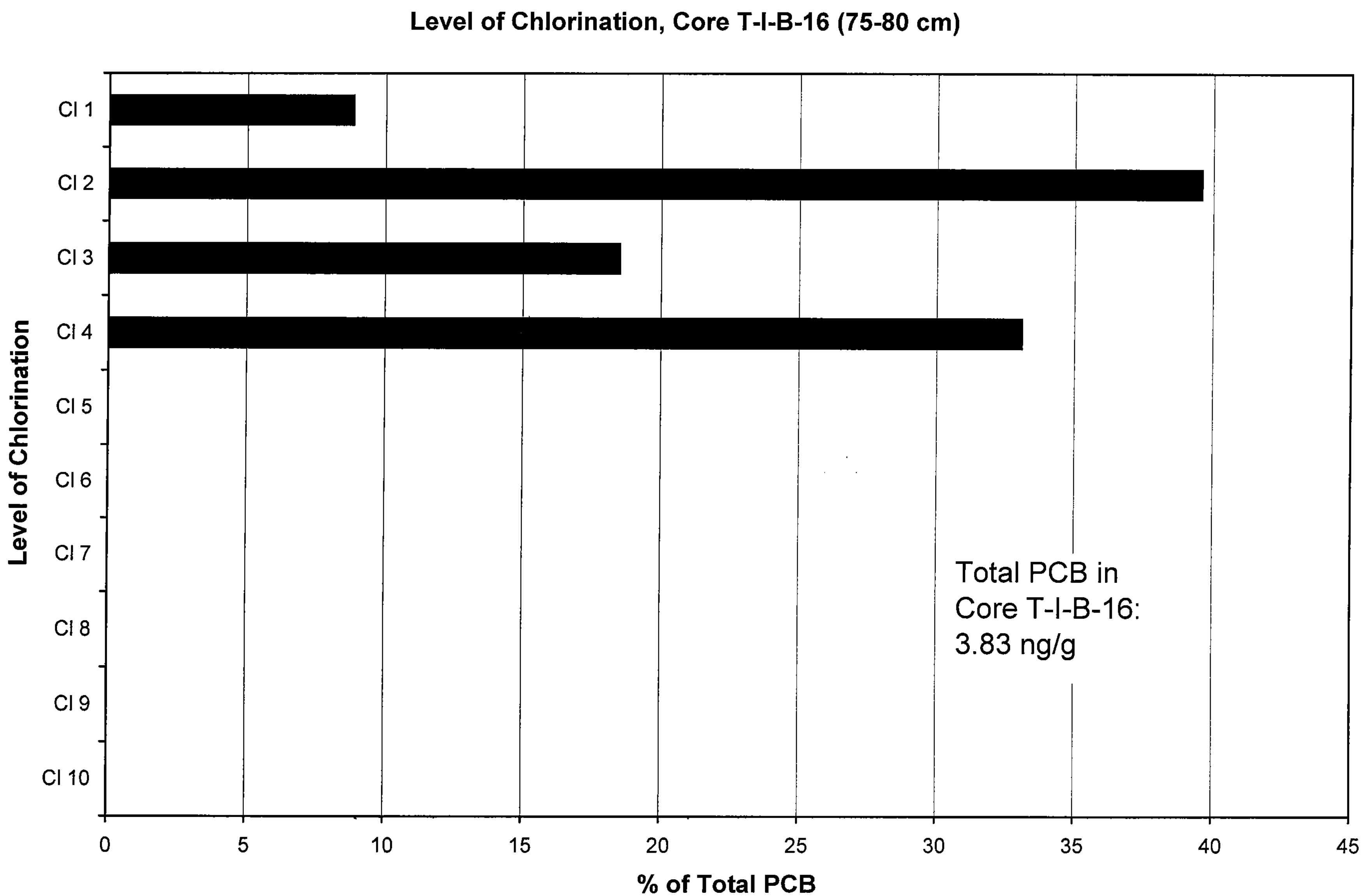




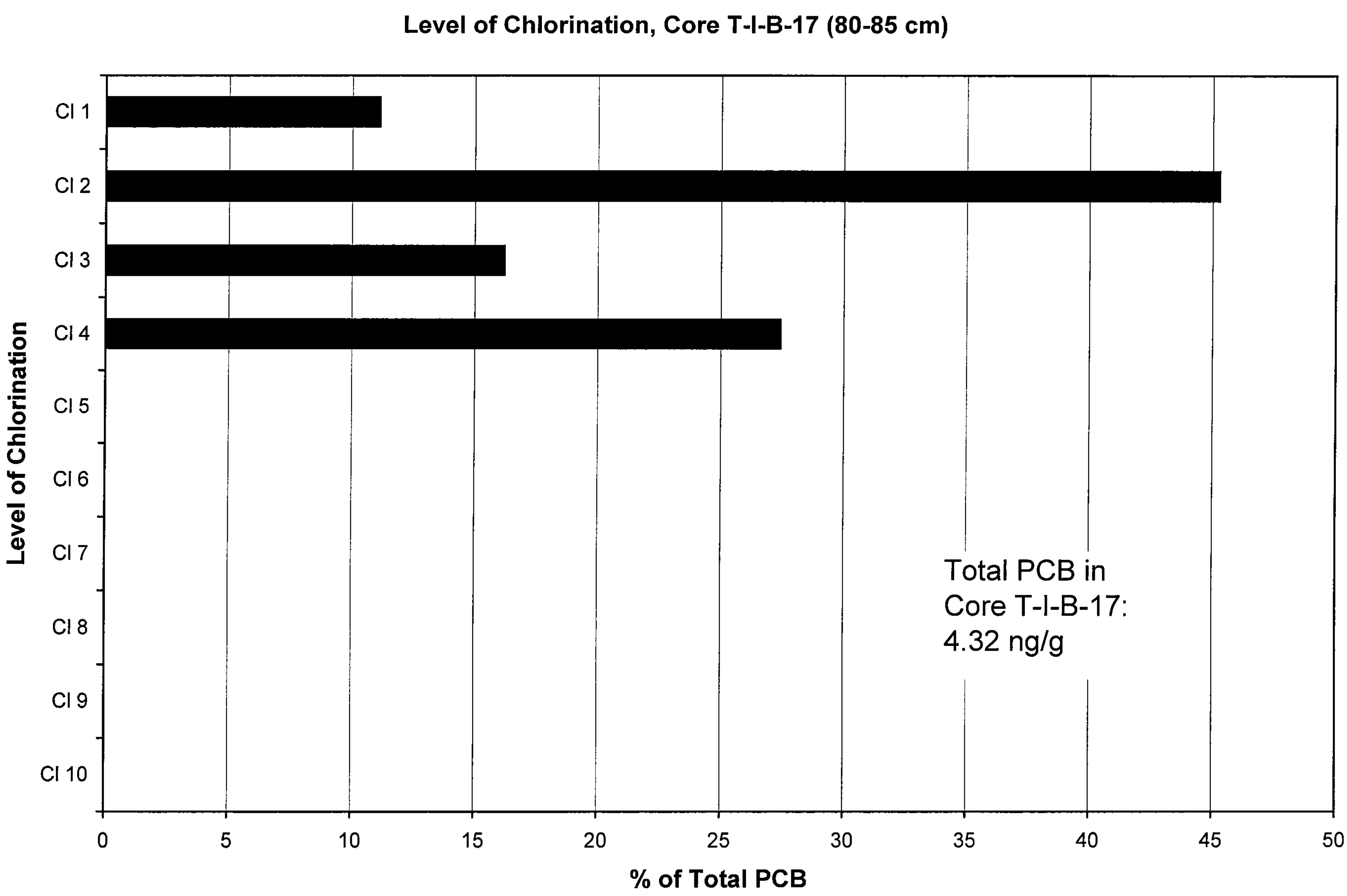
Level of Chlorination, Core T-I-B-14 (65-70 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
50
% of Total PCB
Total PCB in
Core T-I-B-14:
2.65 ng/g



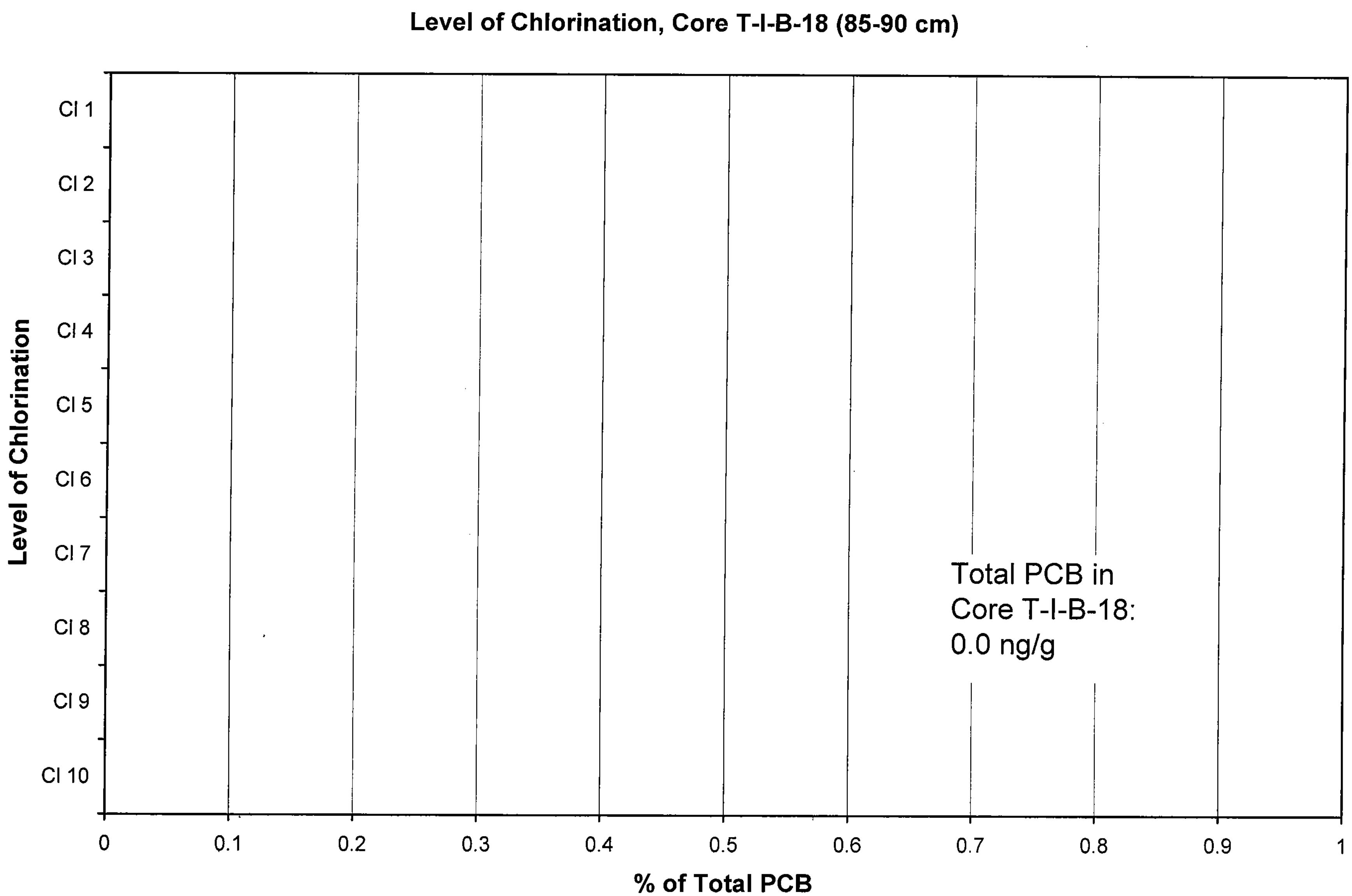
Level of Chlorination, Core T-I-B-15 (70-75 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core T-I-B-15:
5.18 ng/g

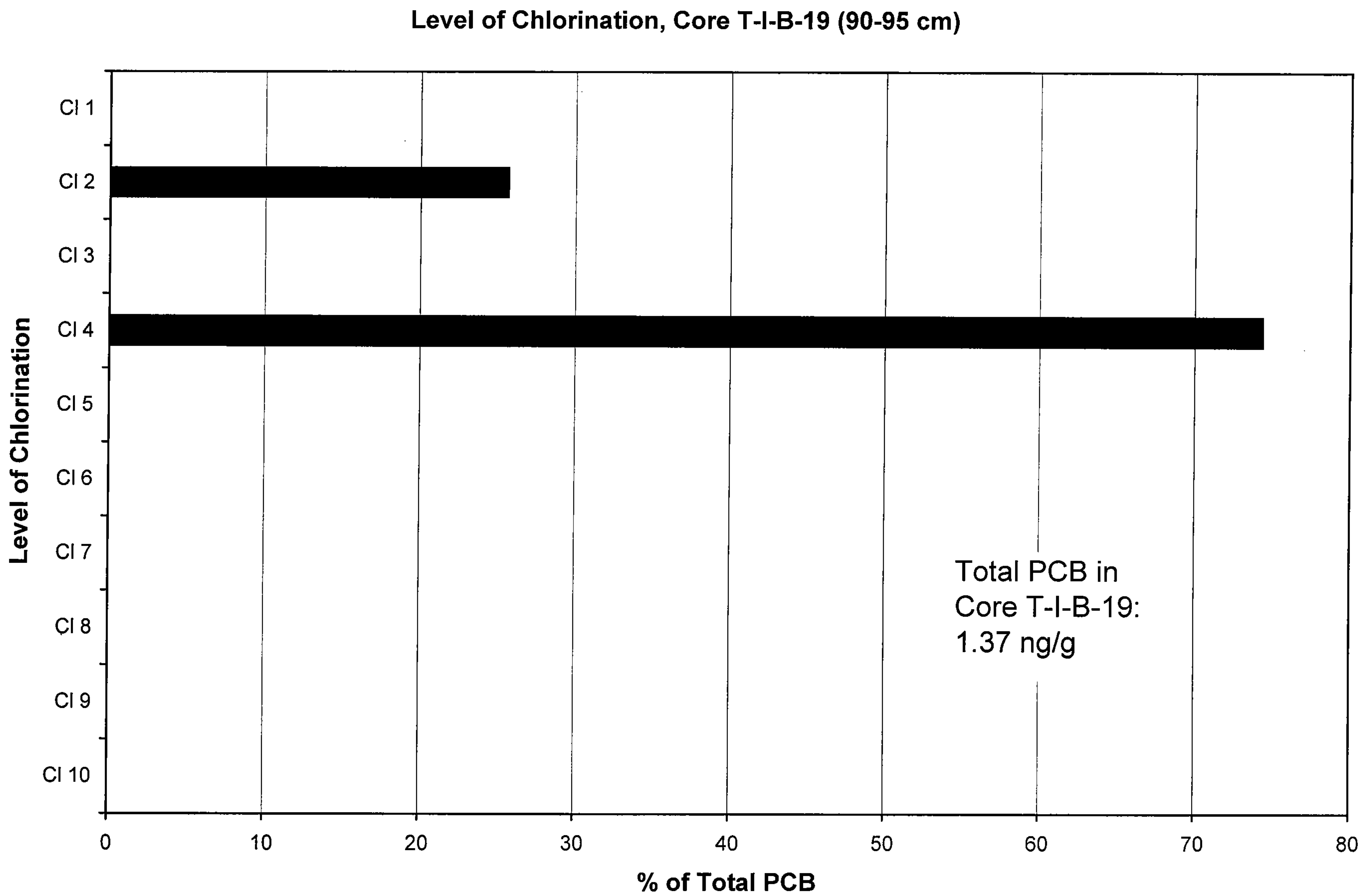


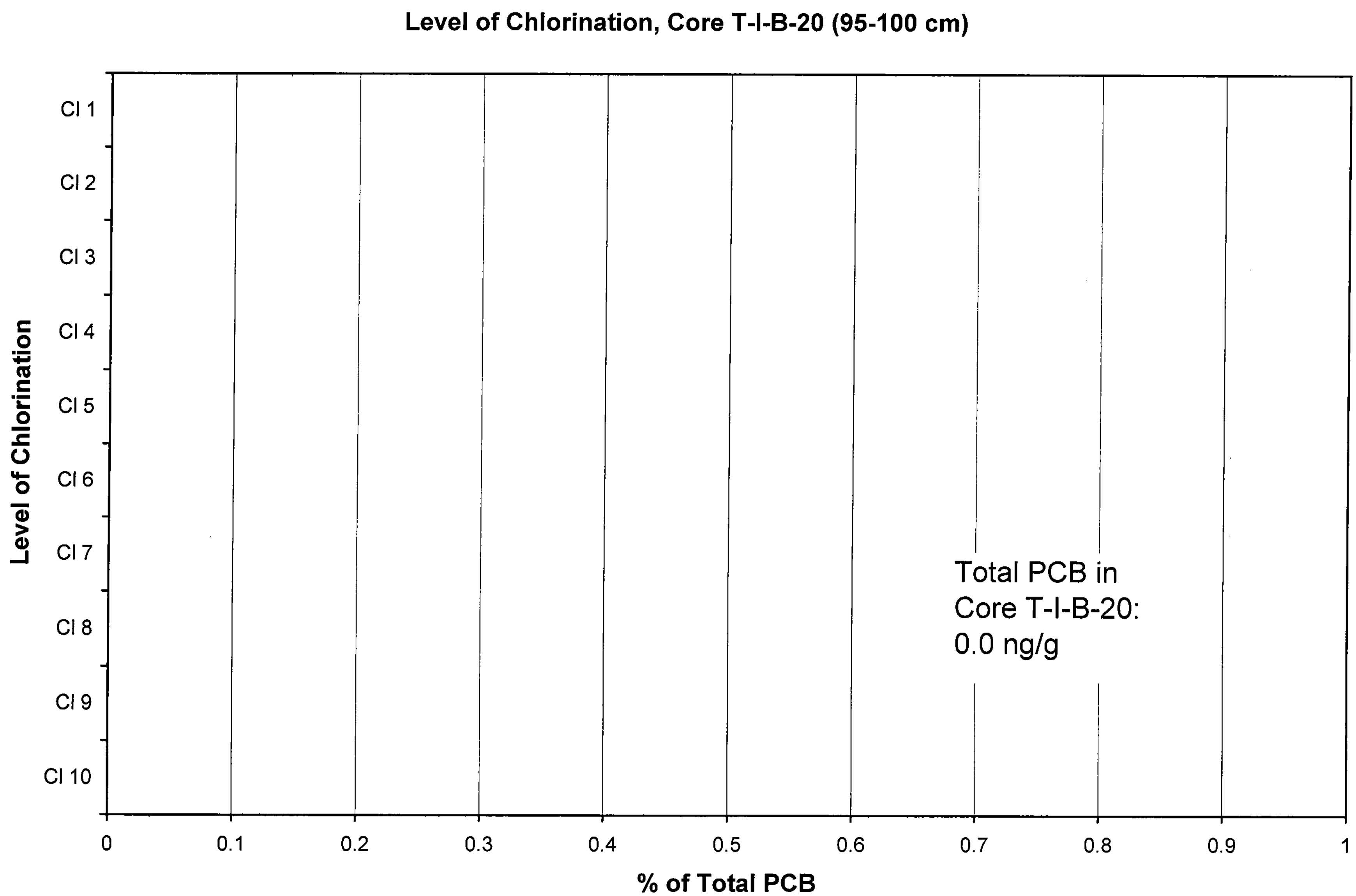
Level of Chlorination, Core T-I-B-16 (75-80 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core T-I-B-16:
3.83 ng/g

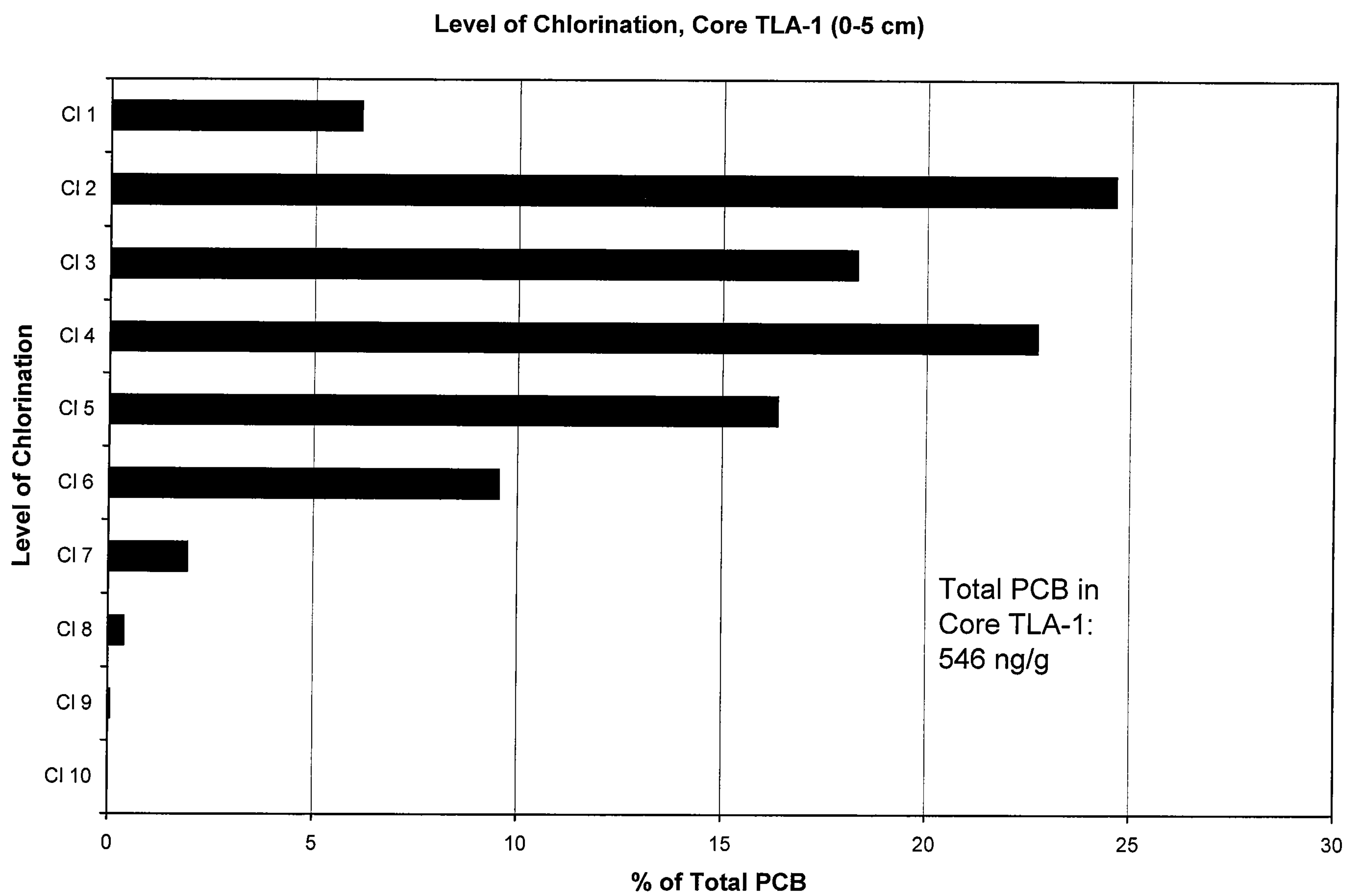


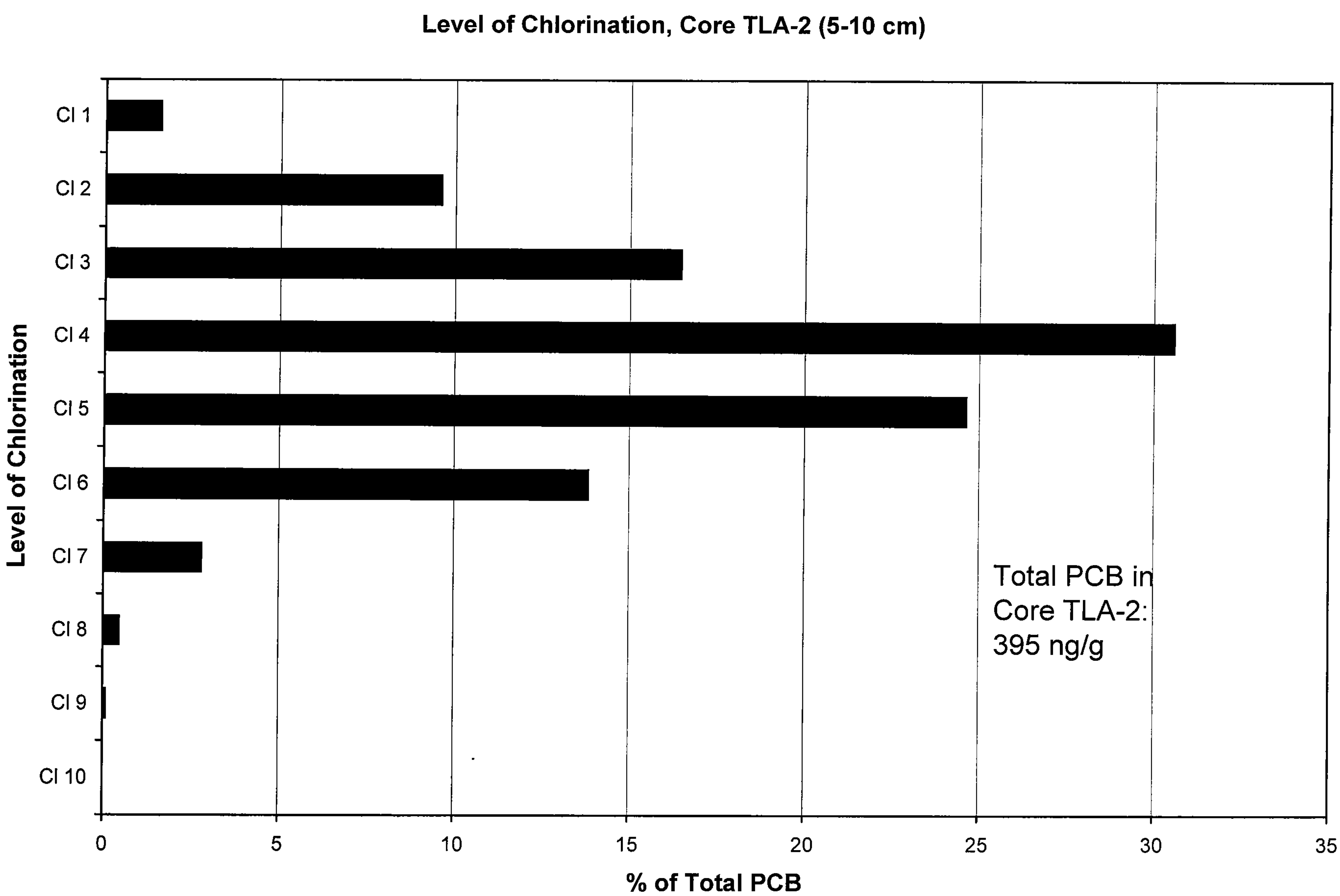
Level of Chlorination, Core T-I-B-17 (80-85 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
50
% of Total PCB
Total PCB in
Core T-I-B-17:
4.32 ng/g


Level of Chlorination, Core T-I-B-18 (85-90 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
% of Total PCB
Total PCB in
Core T-I-B-18:
0.0 ng/g

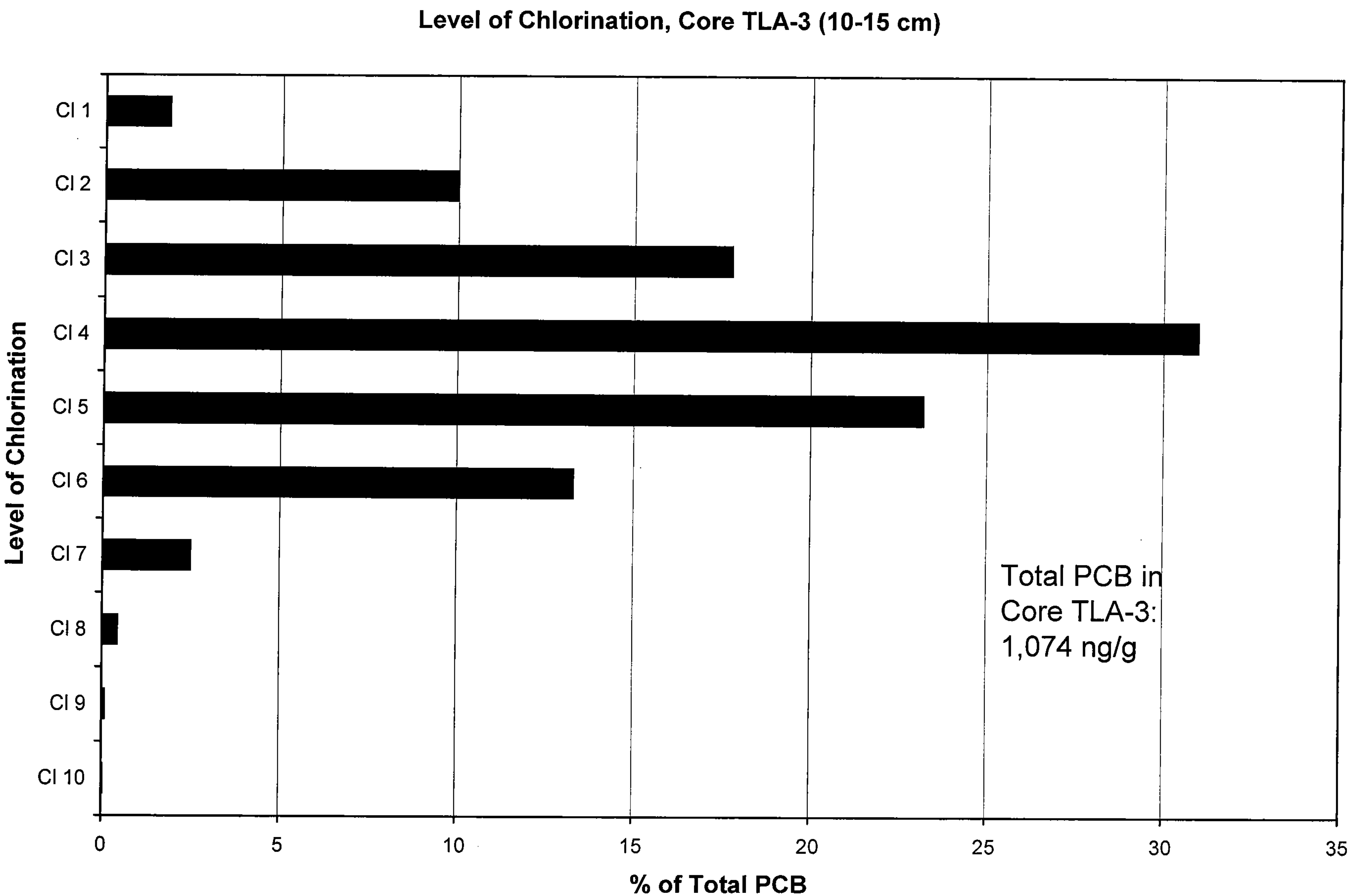

Level of Chlorination, Core T-I-B-19 (90-95 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
70
80
% of Total PCB
Total PCB in
Core T-I-B-19:
1.37 ng/g


Level of Chlorination, Core T-I-B-20 (95-100 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
% of Total PCB
Total PCB in
Core T-I-B-20:
0.0 ng/g


Level of Chlorination, Core TLA-1 (0-5 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
% of Total PCB
Total PCB in
Core TLA-1:
546 ng/g

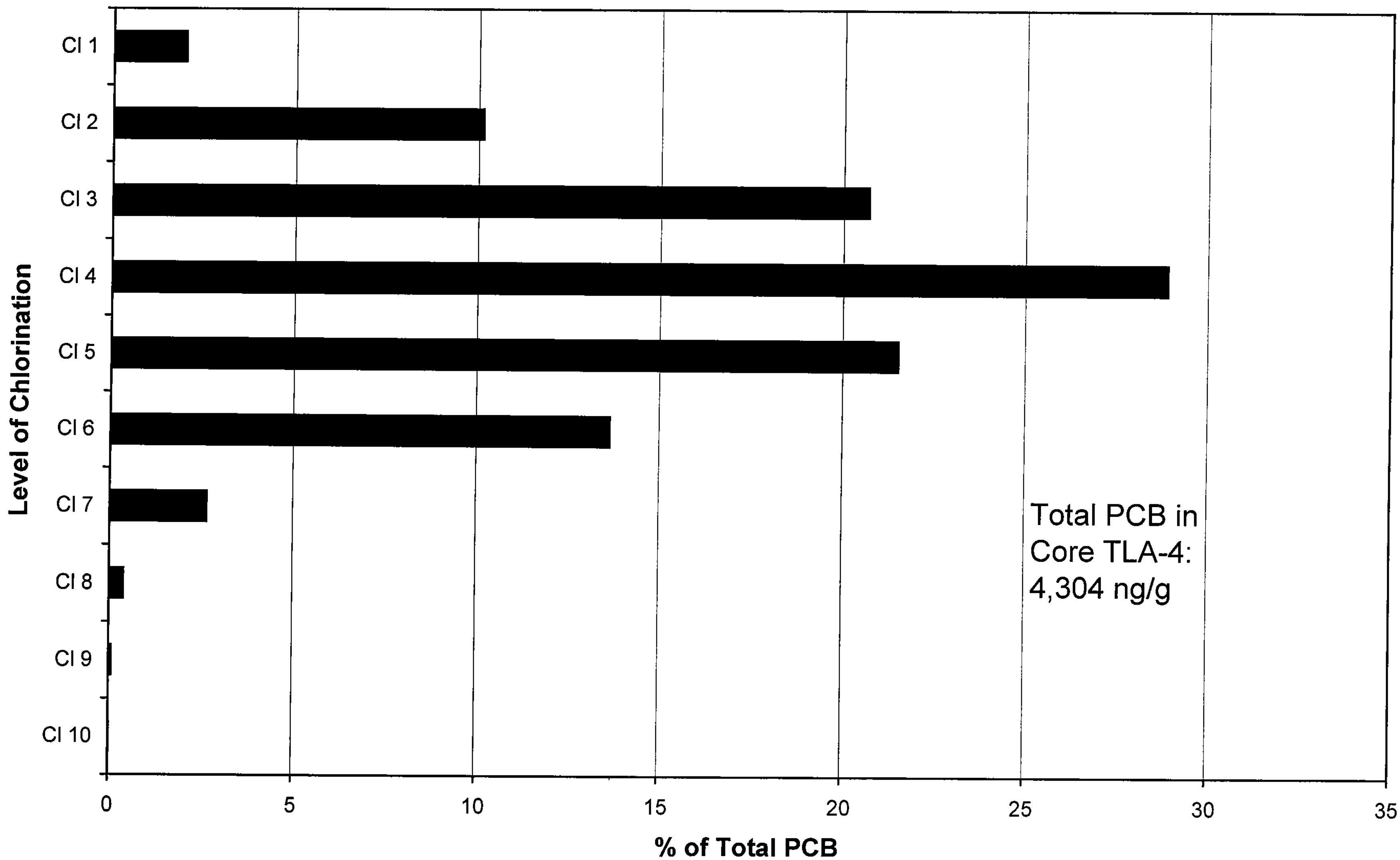


Level of Chlorination, Core TLA-2 (5-10 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TLA-2:
395 ng/g

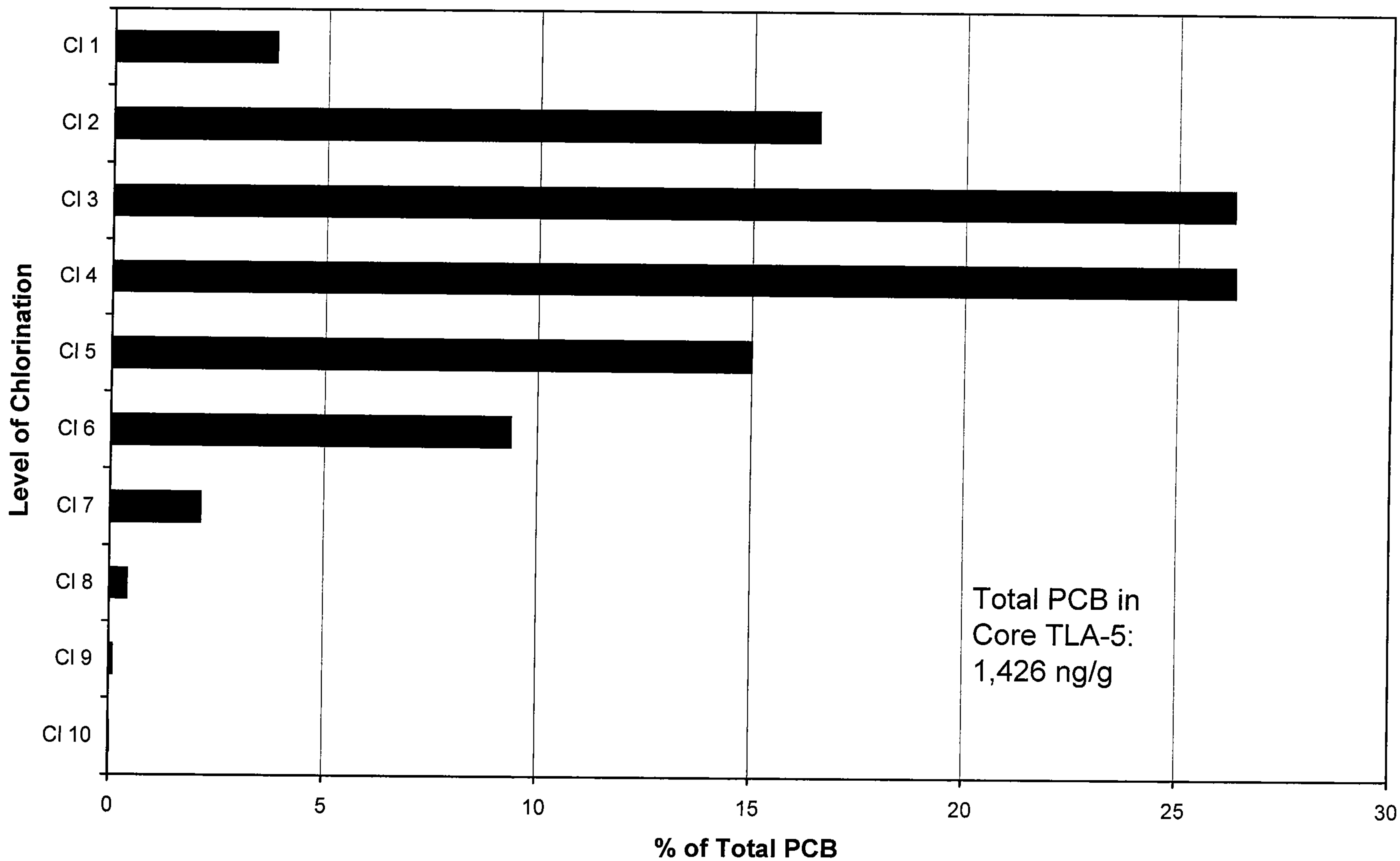


Level of Chlorination, Core TLA-3 (10-15 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in Core TLA-3: 1,074 ng/g

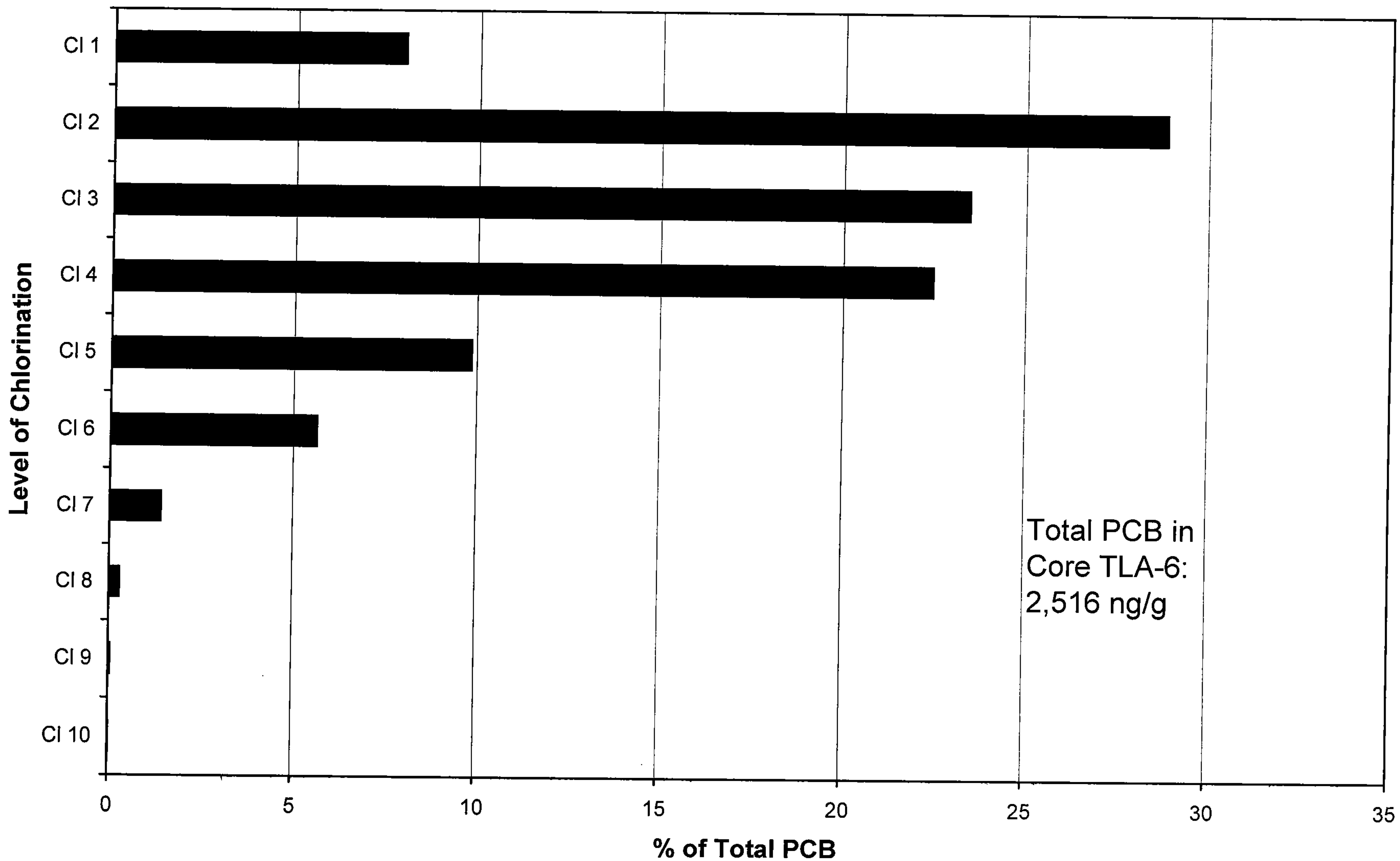
Level of Chlorination, Core TLA-4 (15-20 cm)

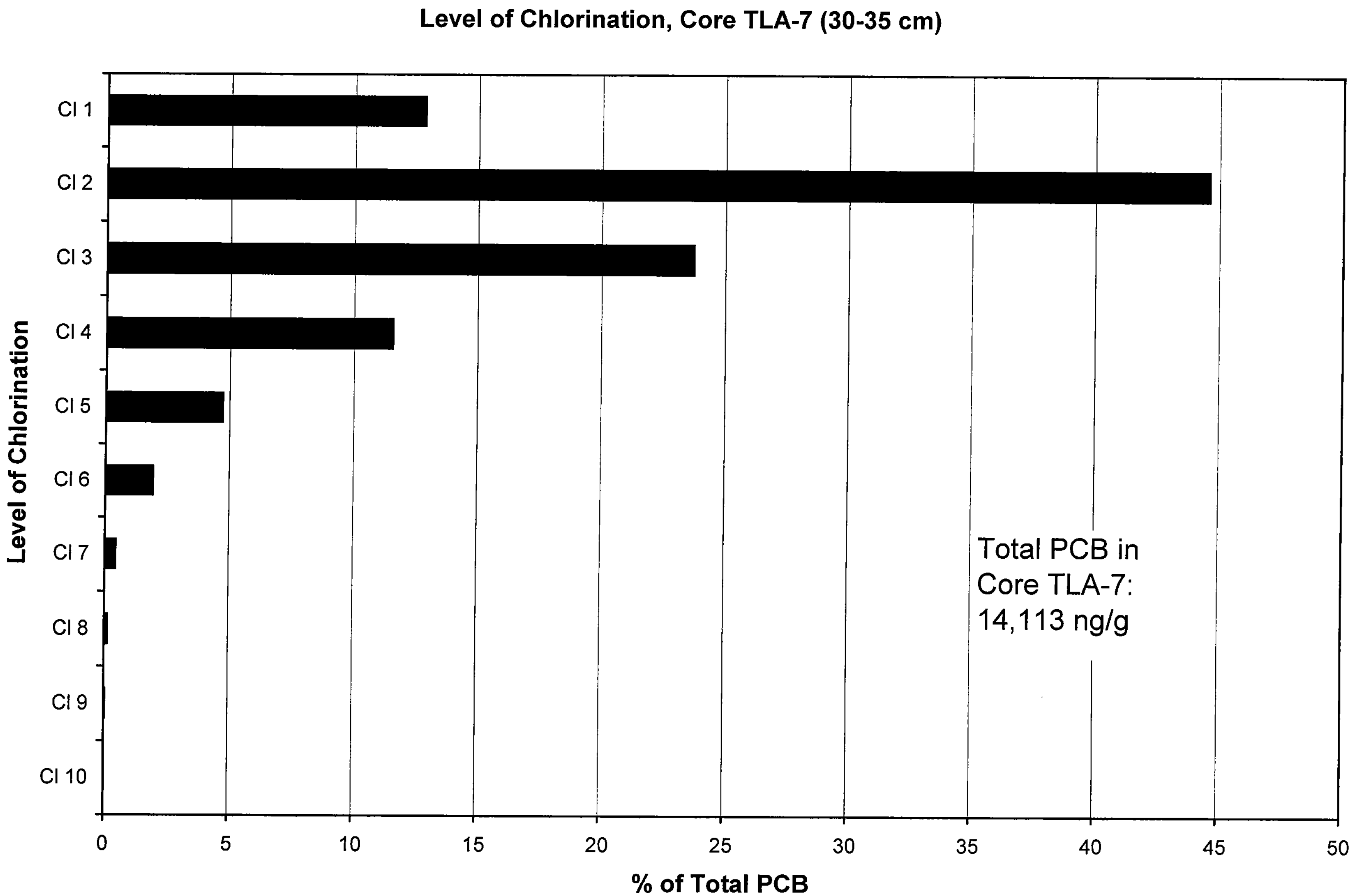


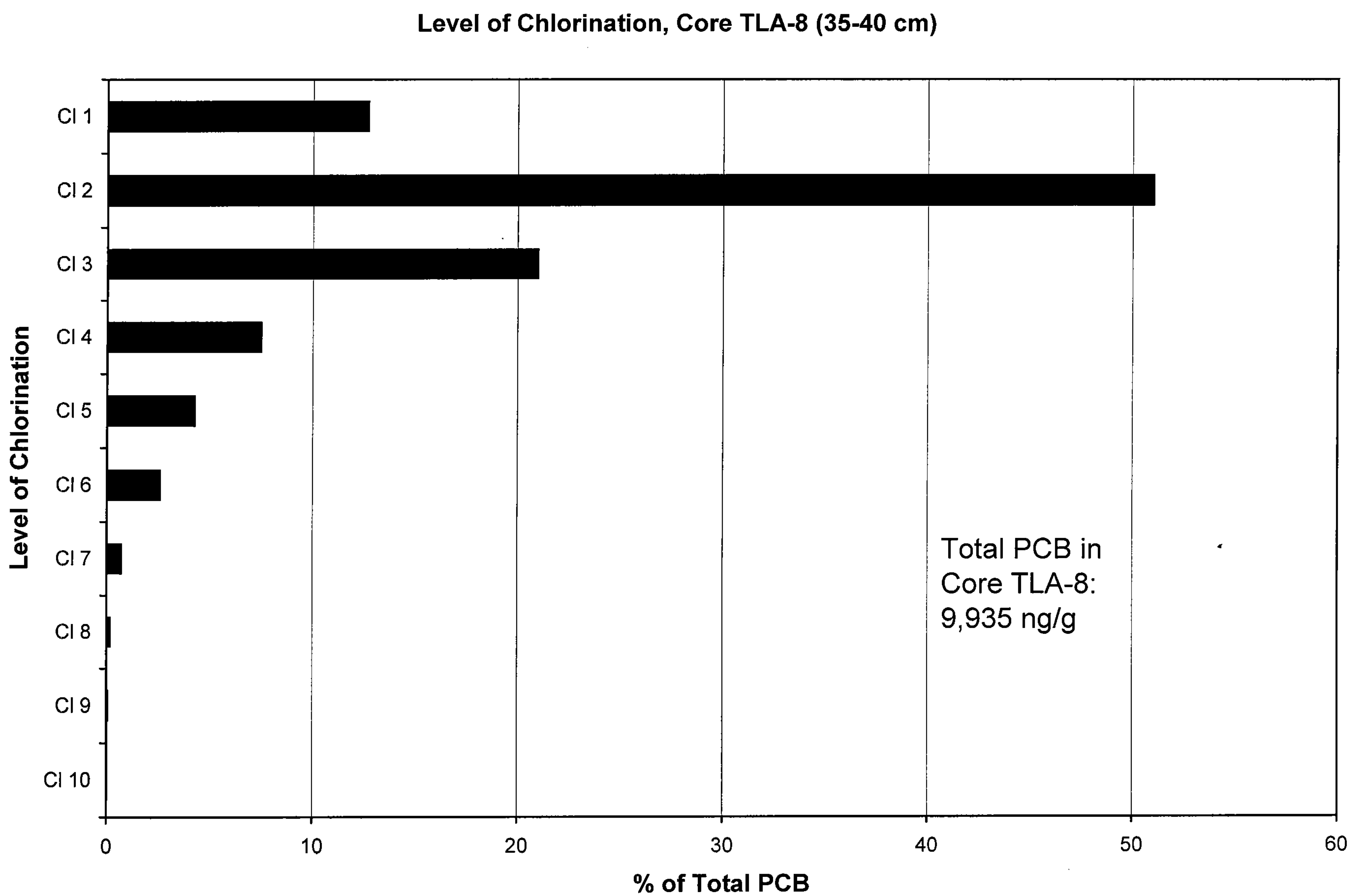
Level of Chlorination, Core TLA-5 (20-25 cm)

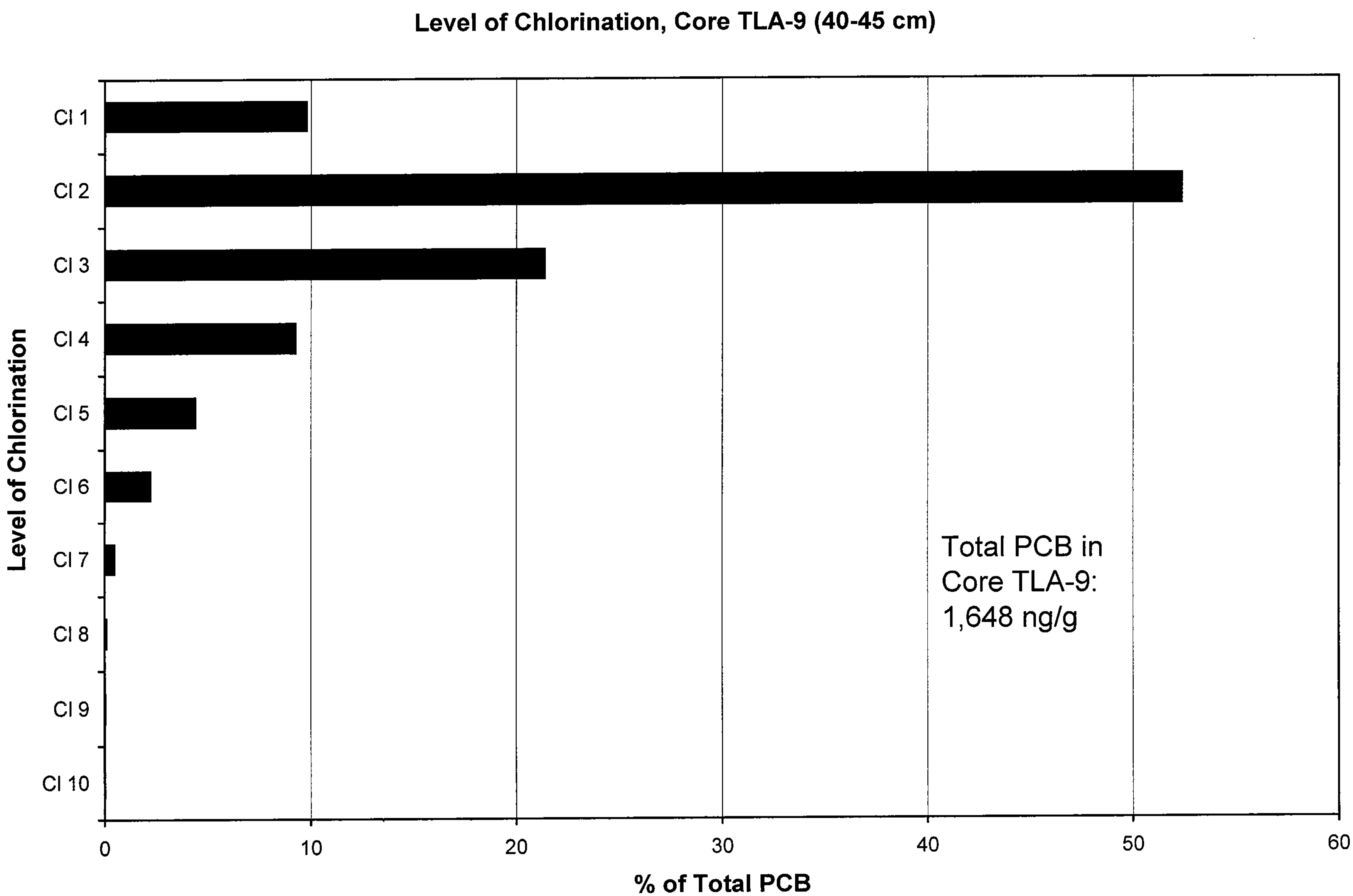


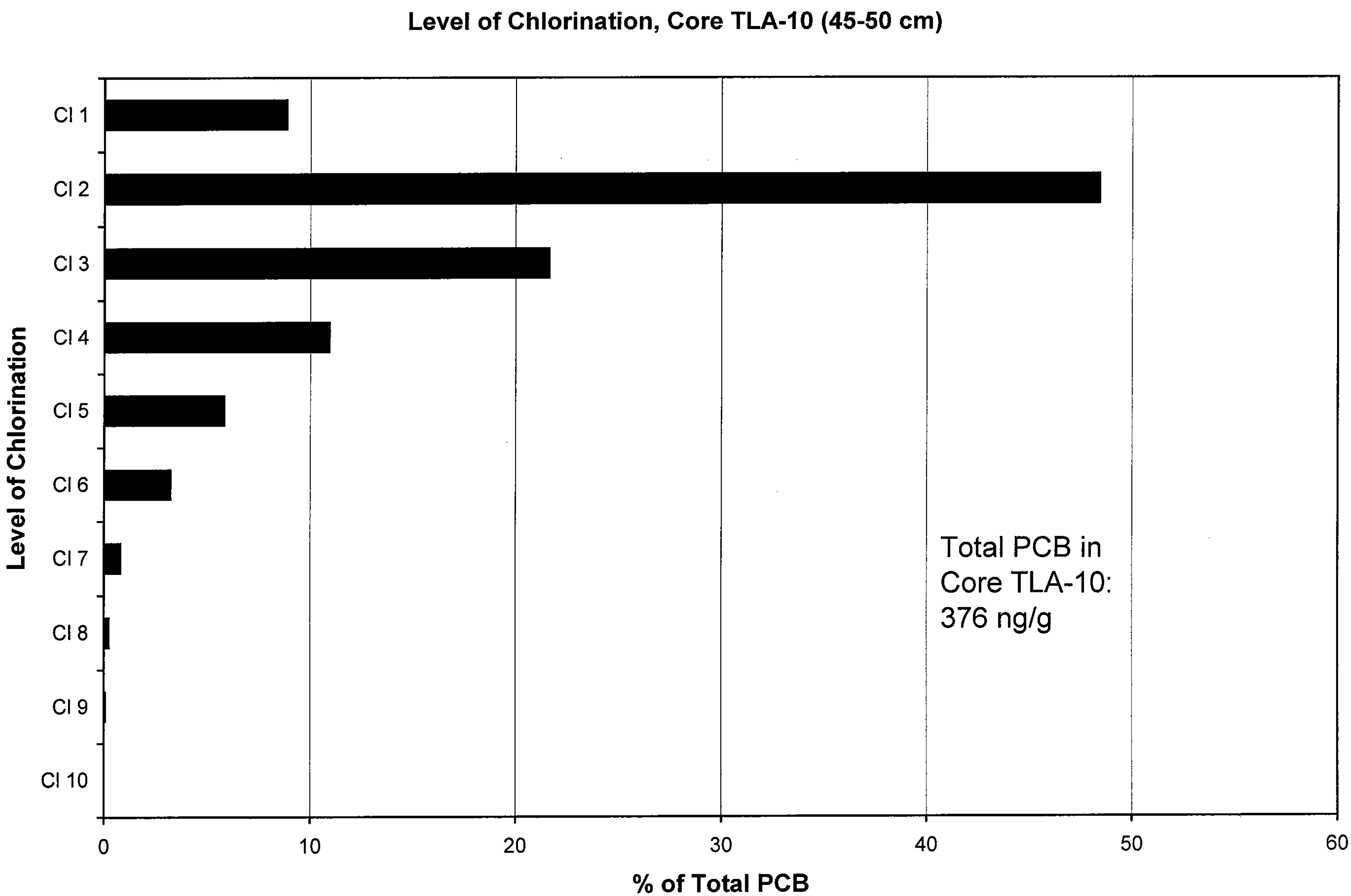
Level of Chlorination, Core TLA-6 (25-30 cm)

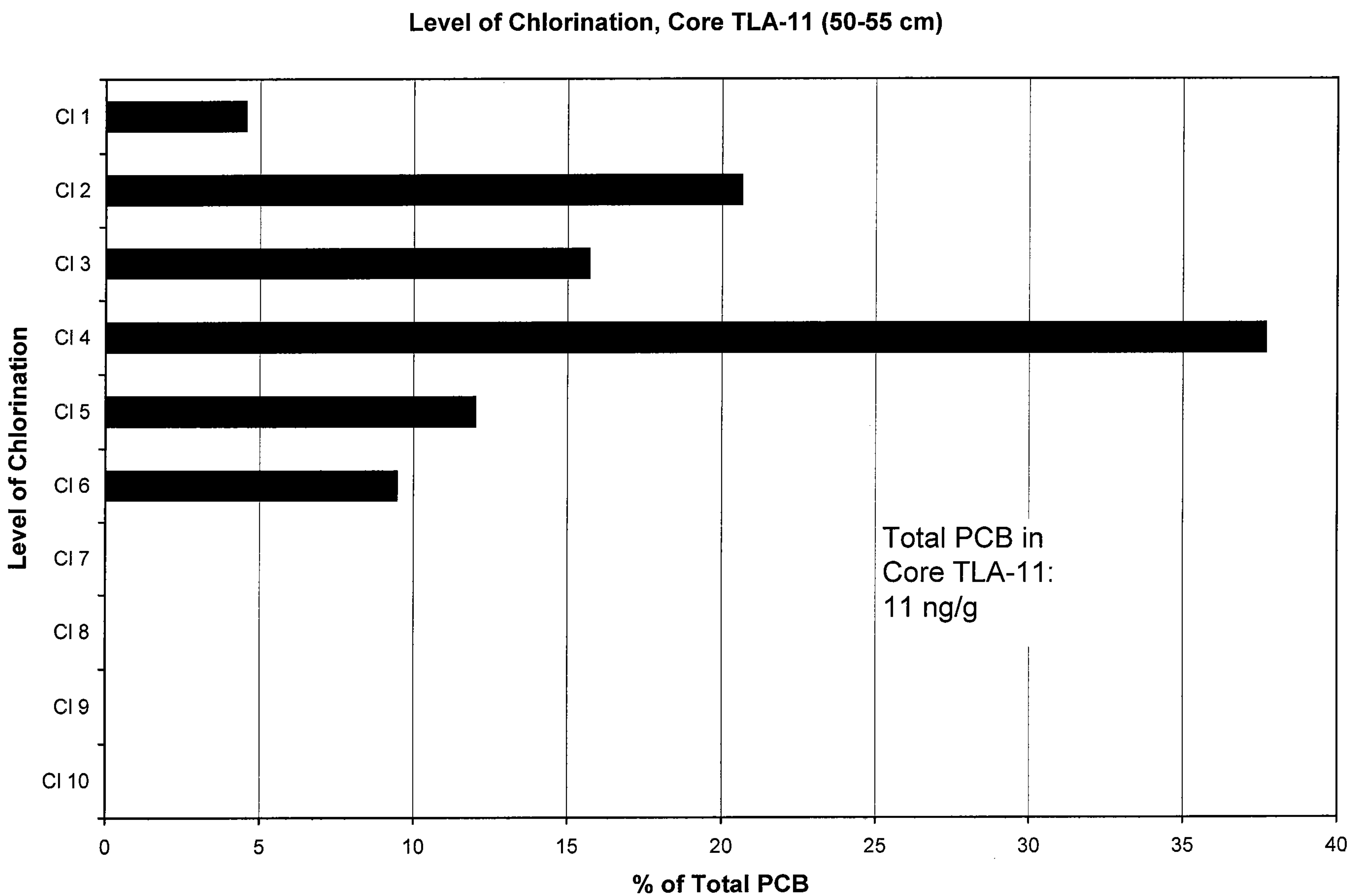



Level of Chlorination, Core TLA-7 (30-35 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
50
% of Total PCB
Total PCB in
Core TLA-7:
14,113 ng/g

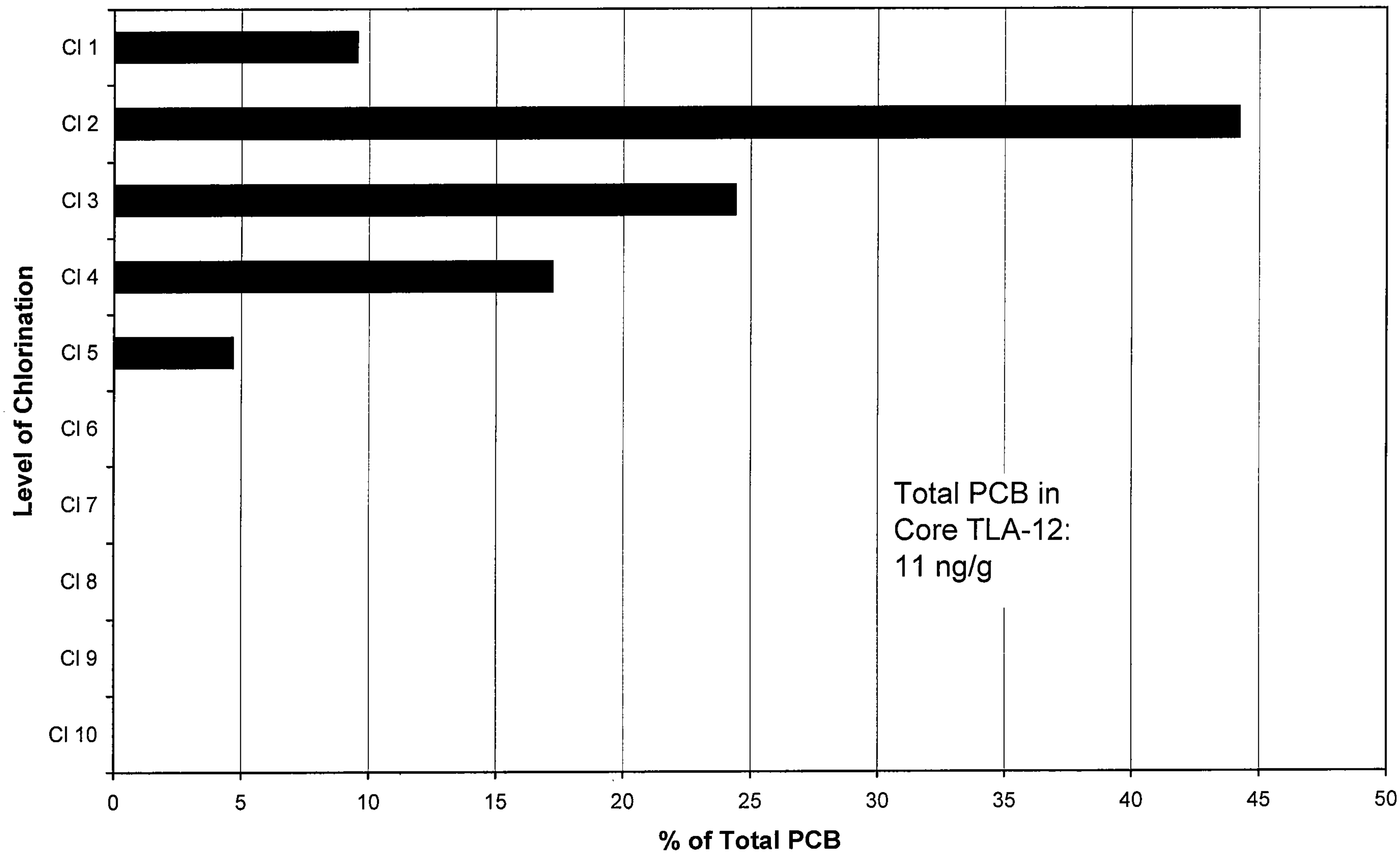

Level of Chlorination, Core TLA-8 (35-40 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
% of Total PCB
Total PCB in
Core TLA-8:
9,935 ng/g

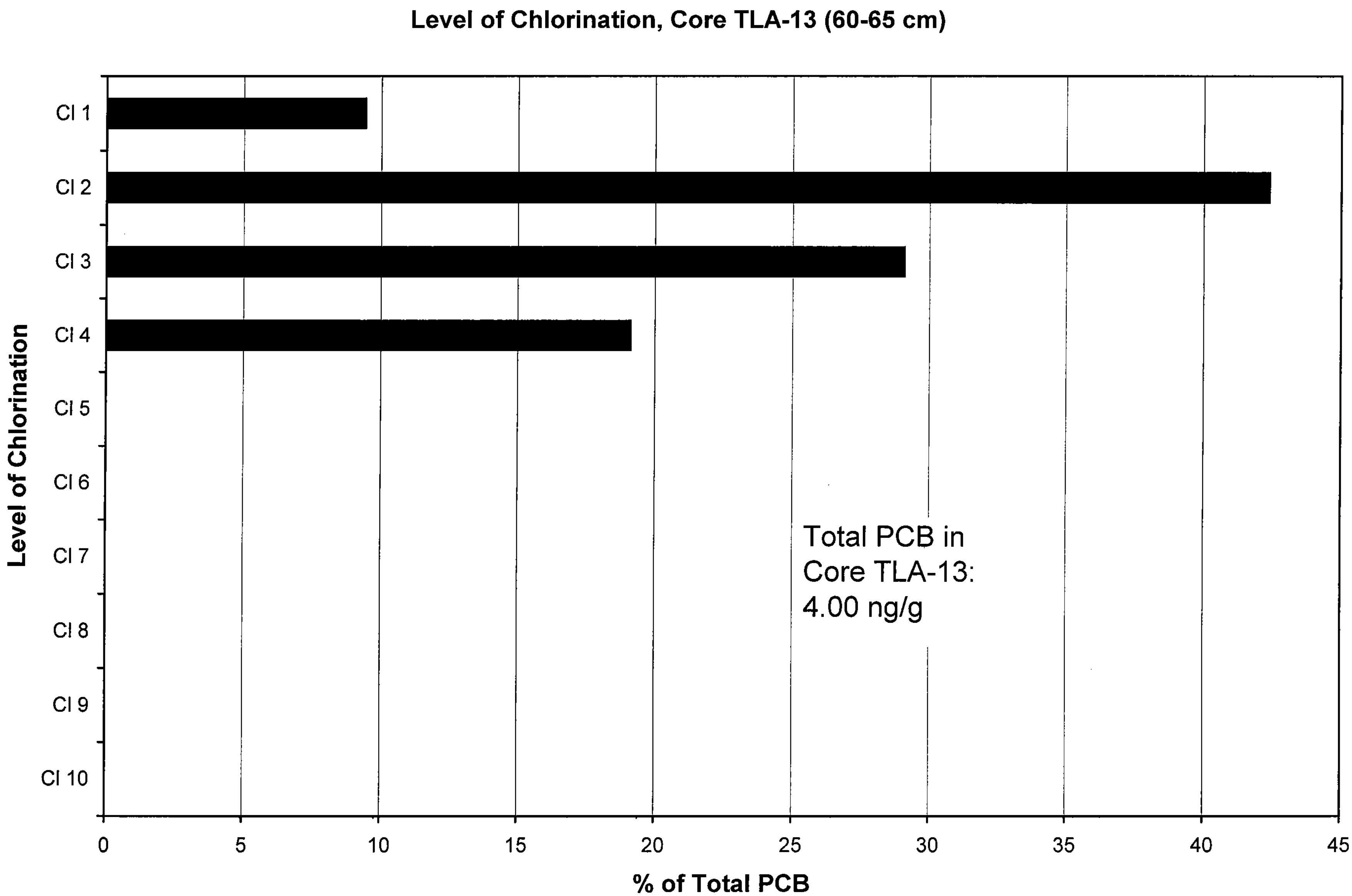

Level of Chlorination, Core TLA-9 (40-45 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
% of Total PCB
Total PCB in
Core TLA-9:
1,648 ng/g

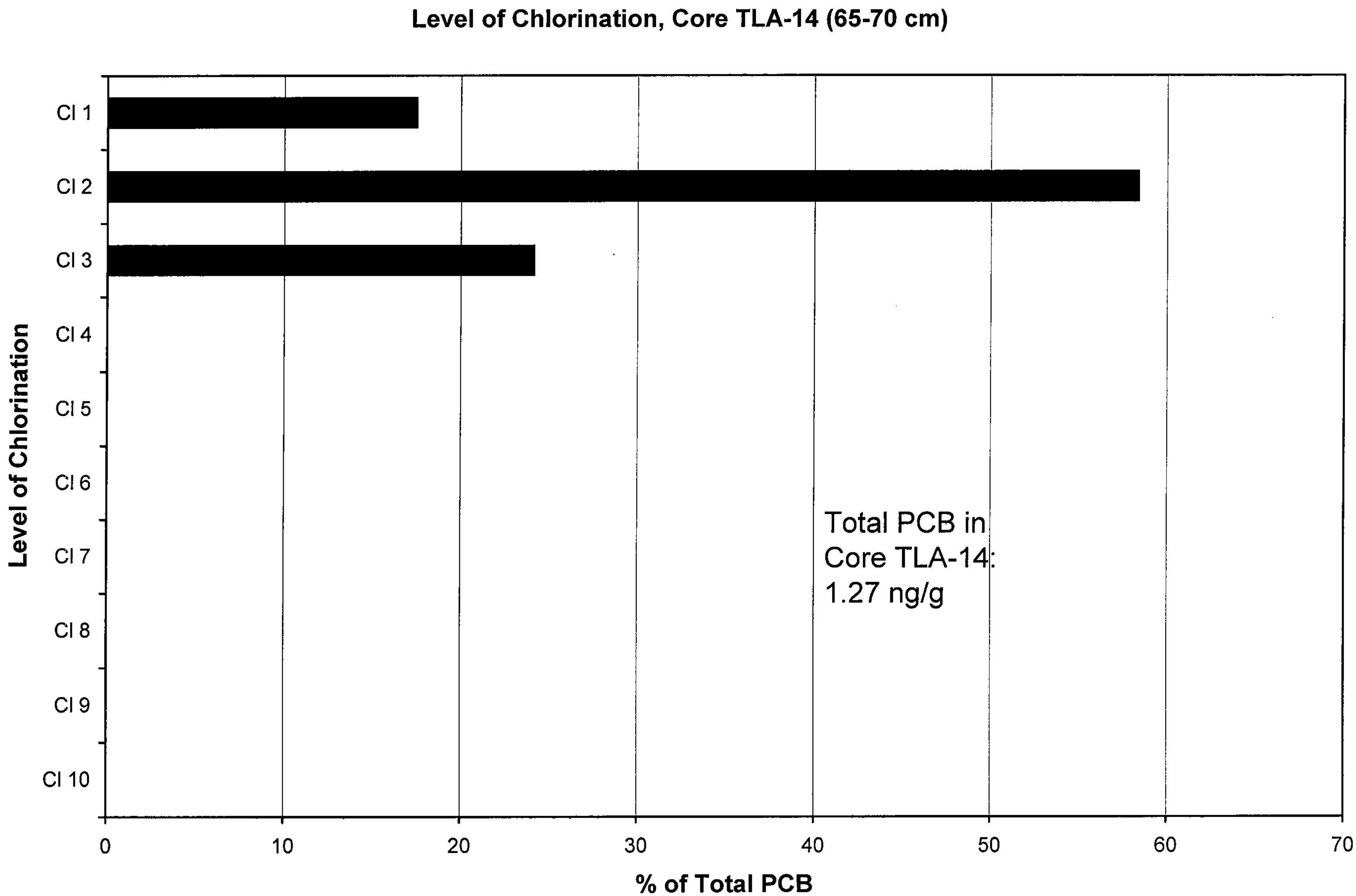

Level of Chlorination, Core TLA-10 (45-50 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
% of Total PCB
Total PCB in
Core TLA-10:
376 ng/g


Level of Chlorination, Core TLA-11 (50-55 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in
Core TLA-11:
11 ng/g

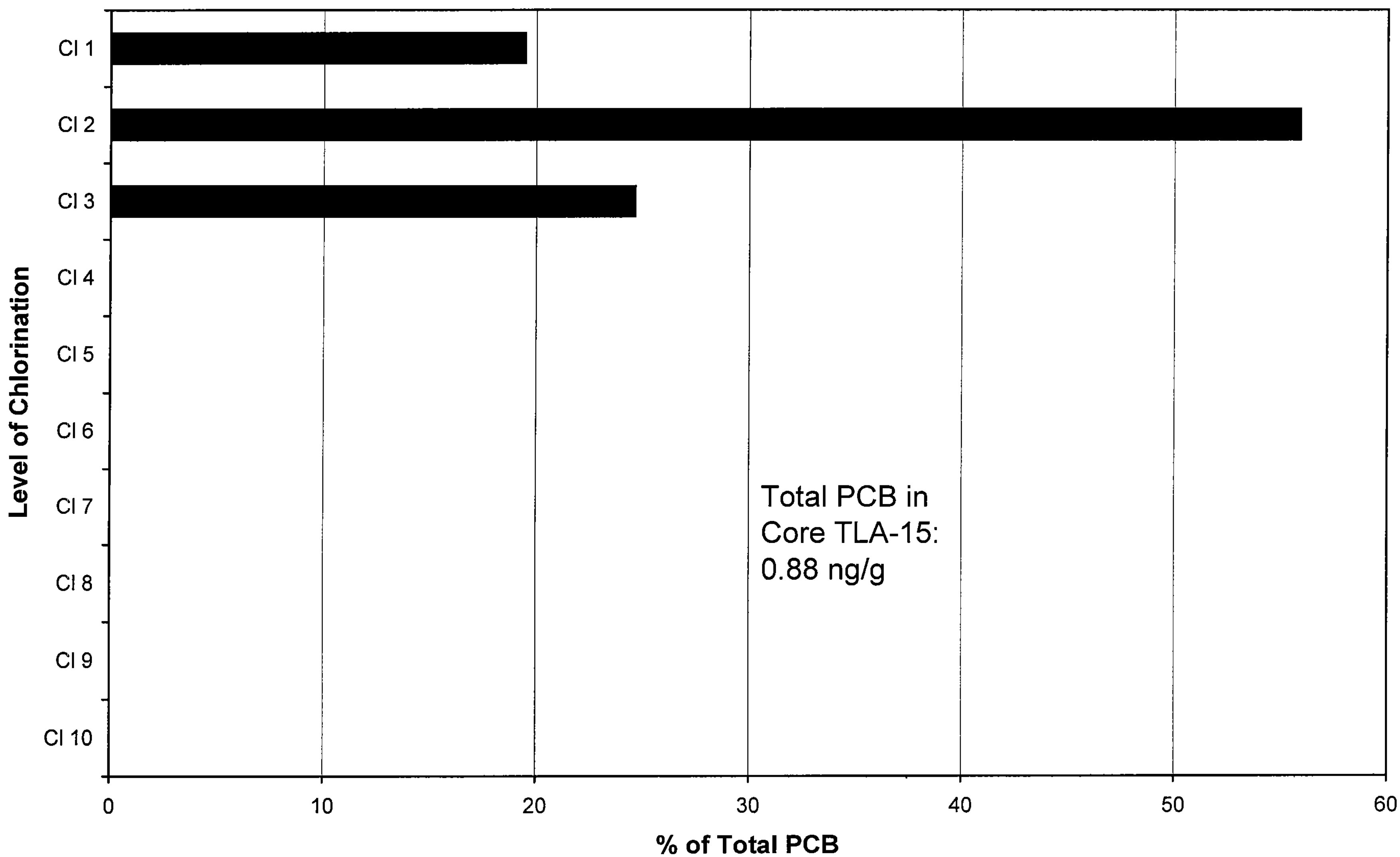
Level of Chlorination, Core TLA-12 (55-60 cm)



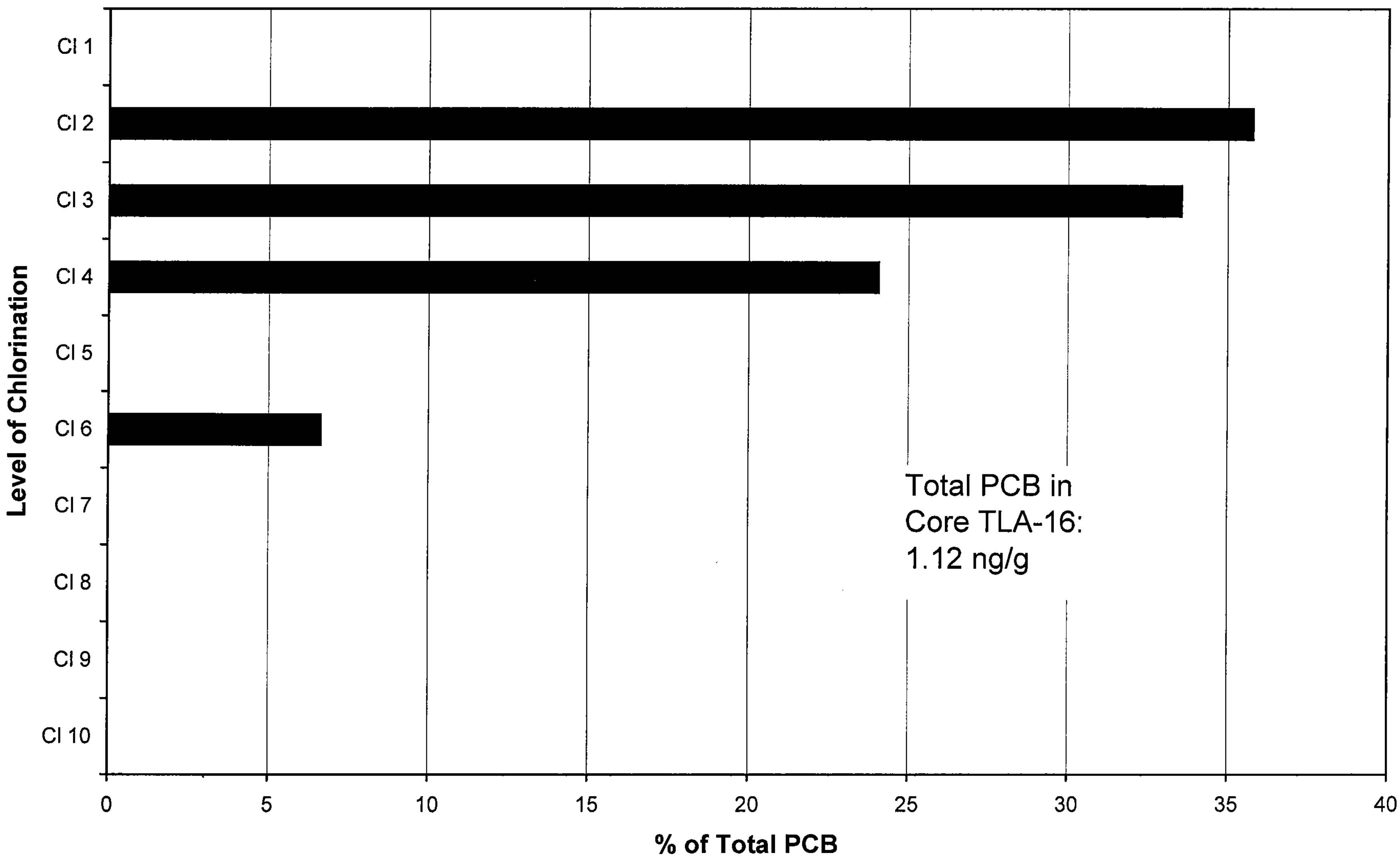

Level of Chlorination, Core TLA-13 (60-65 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core TLA-13:
4.00 ng/g

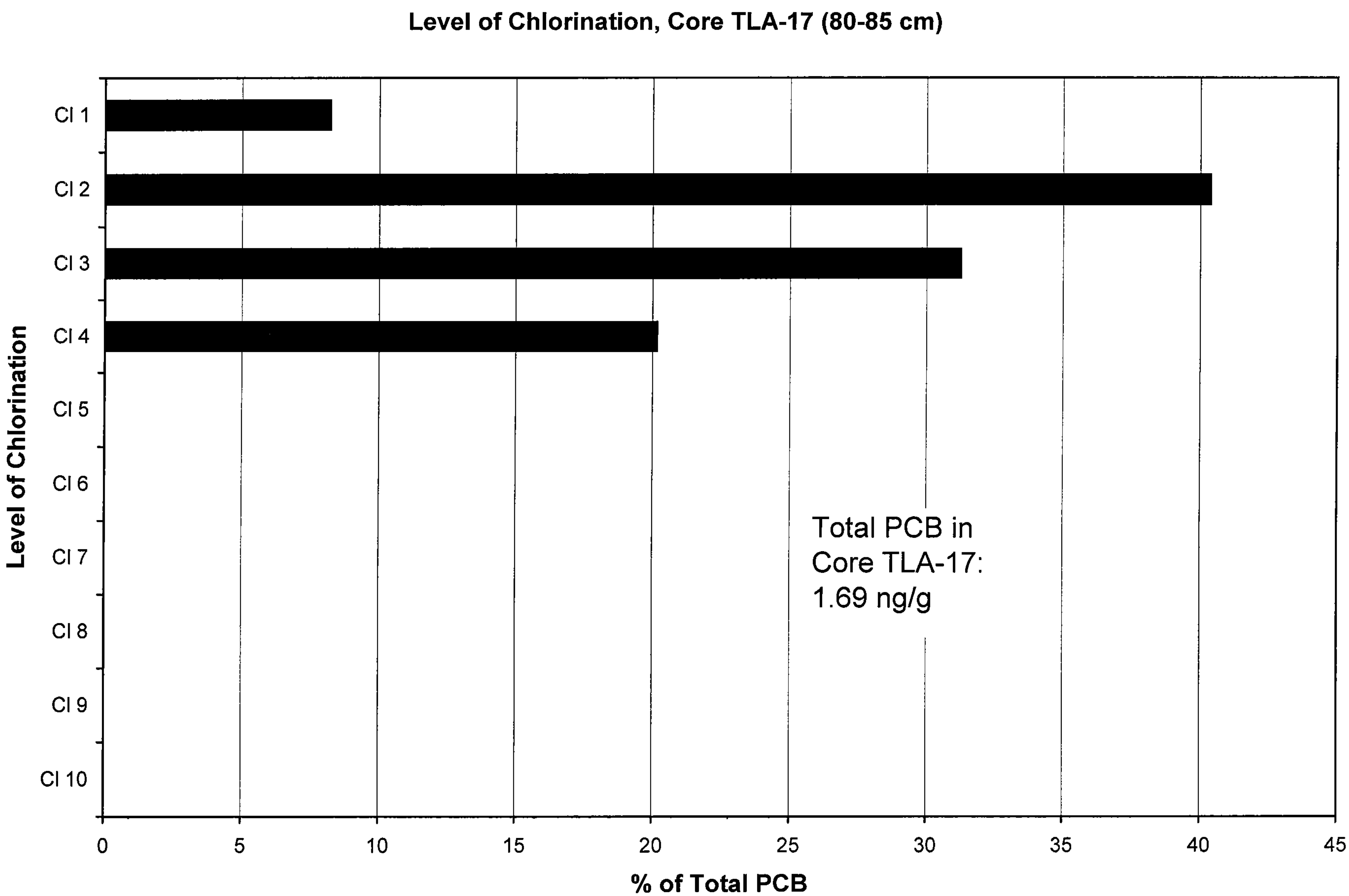

Level of Chlorination, Core TLA-14 (65-70 cm)
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Level of Chlorination
0
10
20
30
40
50
60
70
% of Total PCB
Total PCB in
Core TLA-14:
1.27 ng/g

Level of Chlorination, Core TLA-15 (70-75 cm)

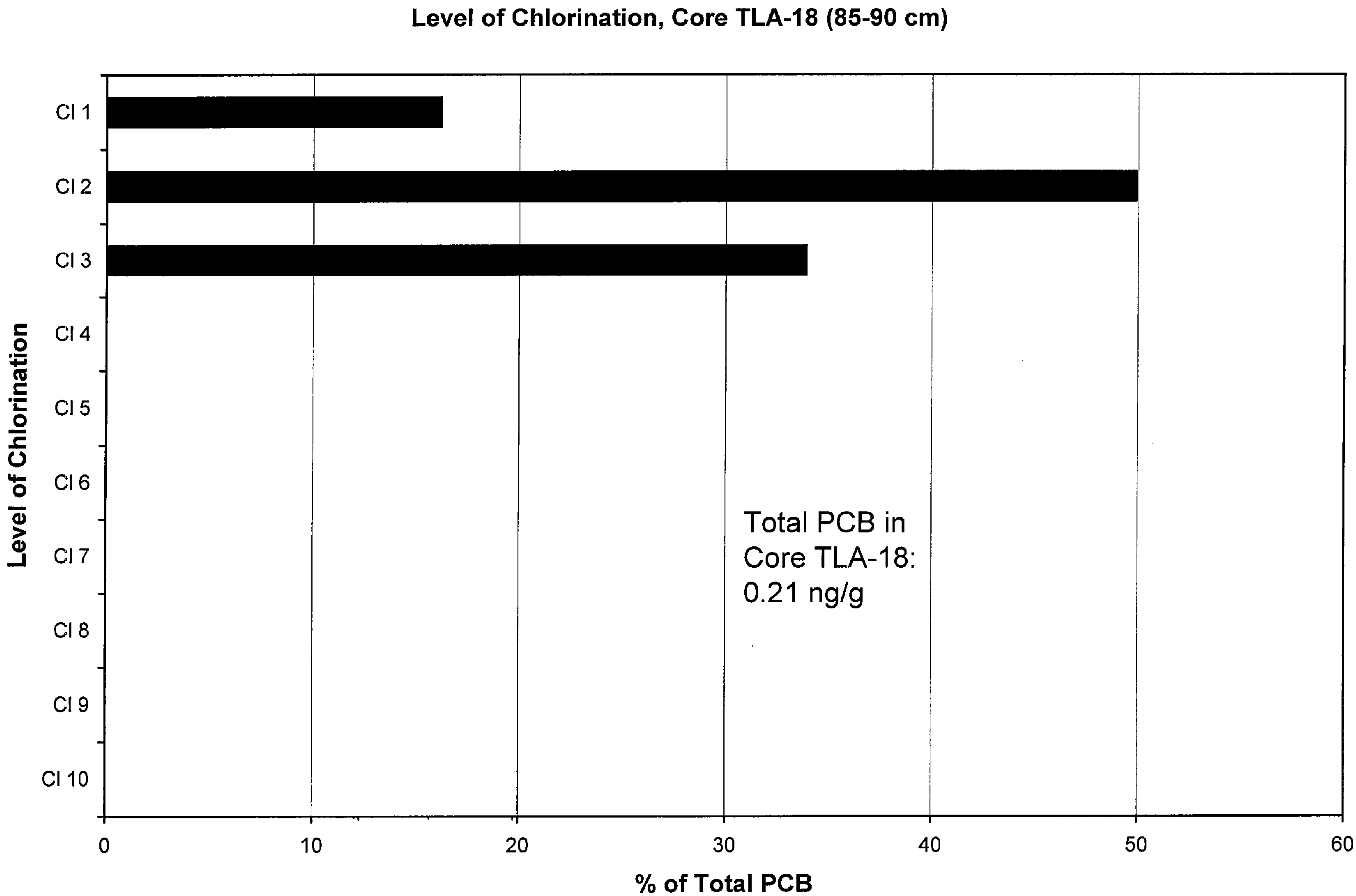


Level of Chlorination, Core TLA-16 (75-80 cm)

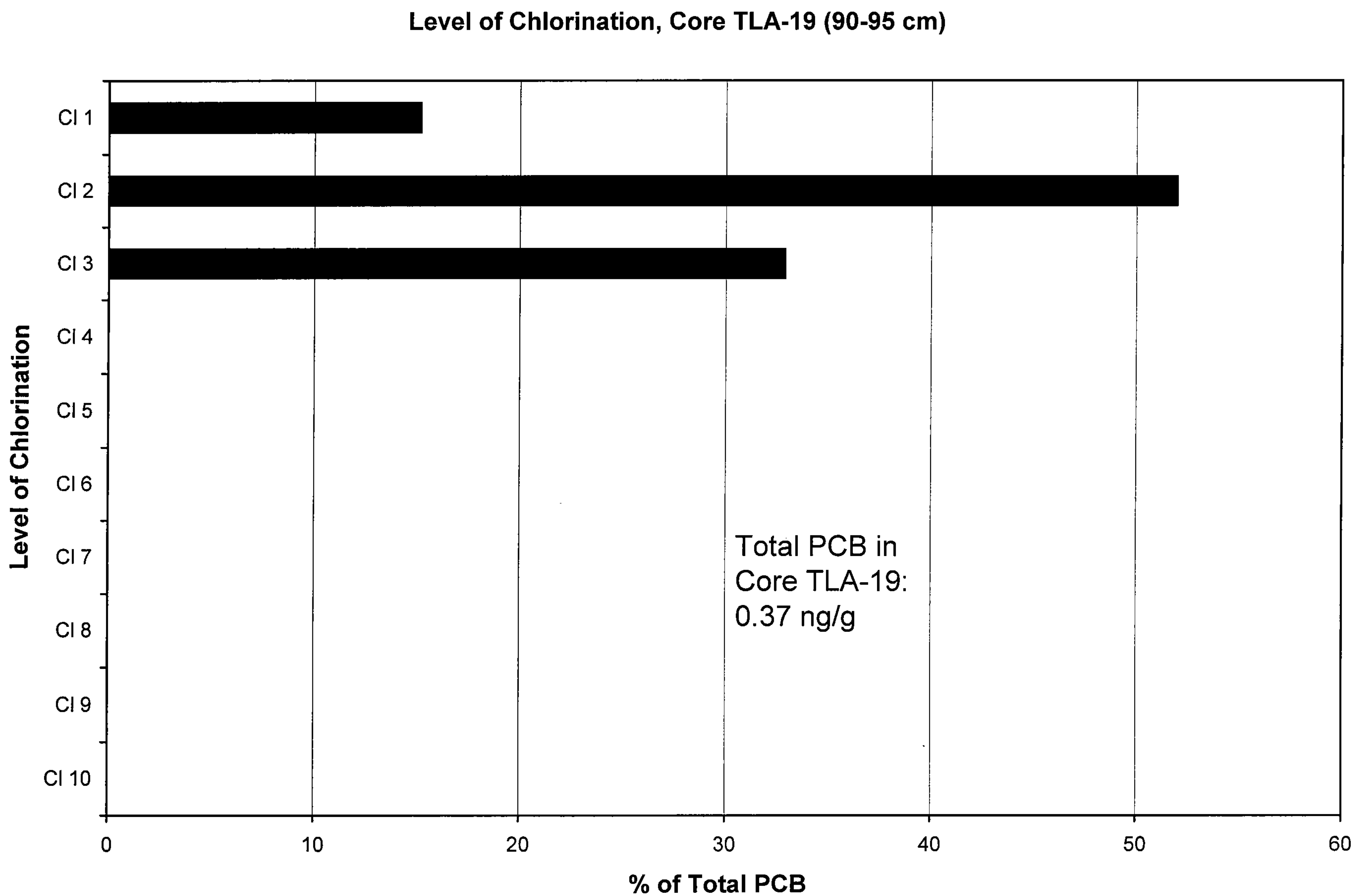


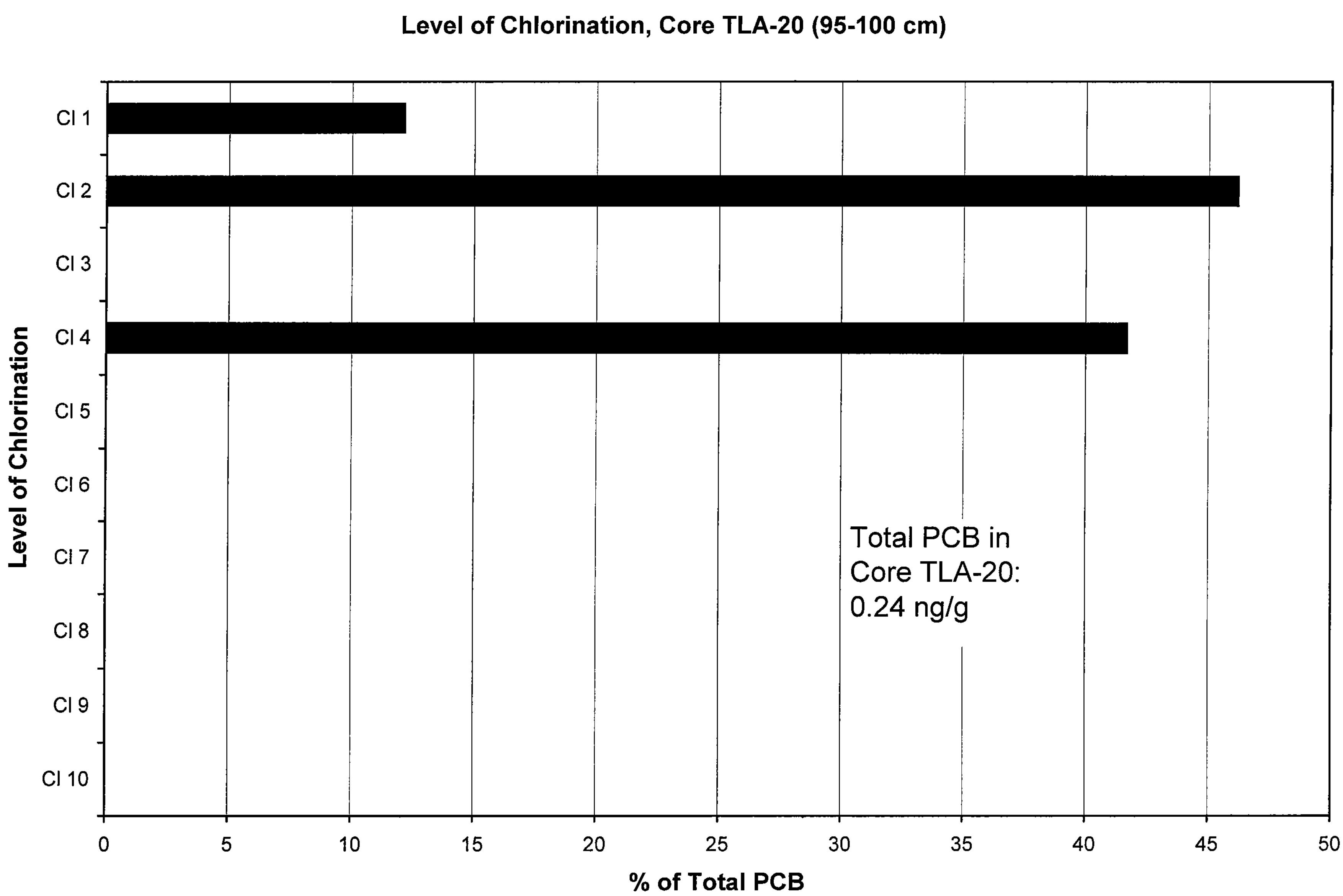


Level of Chlorination, Core TLA-17 (80-85 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core TLA-17:
1.69 ng/g

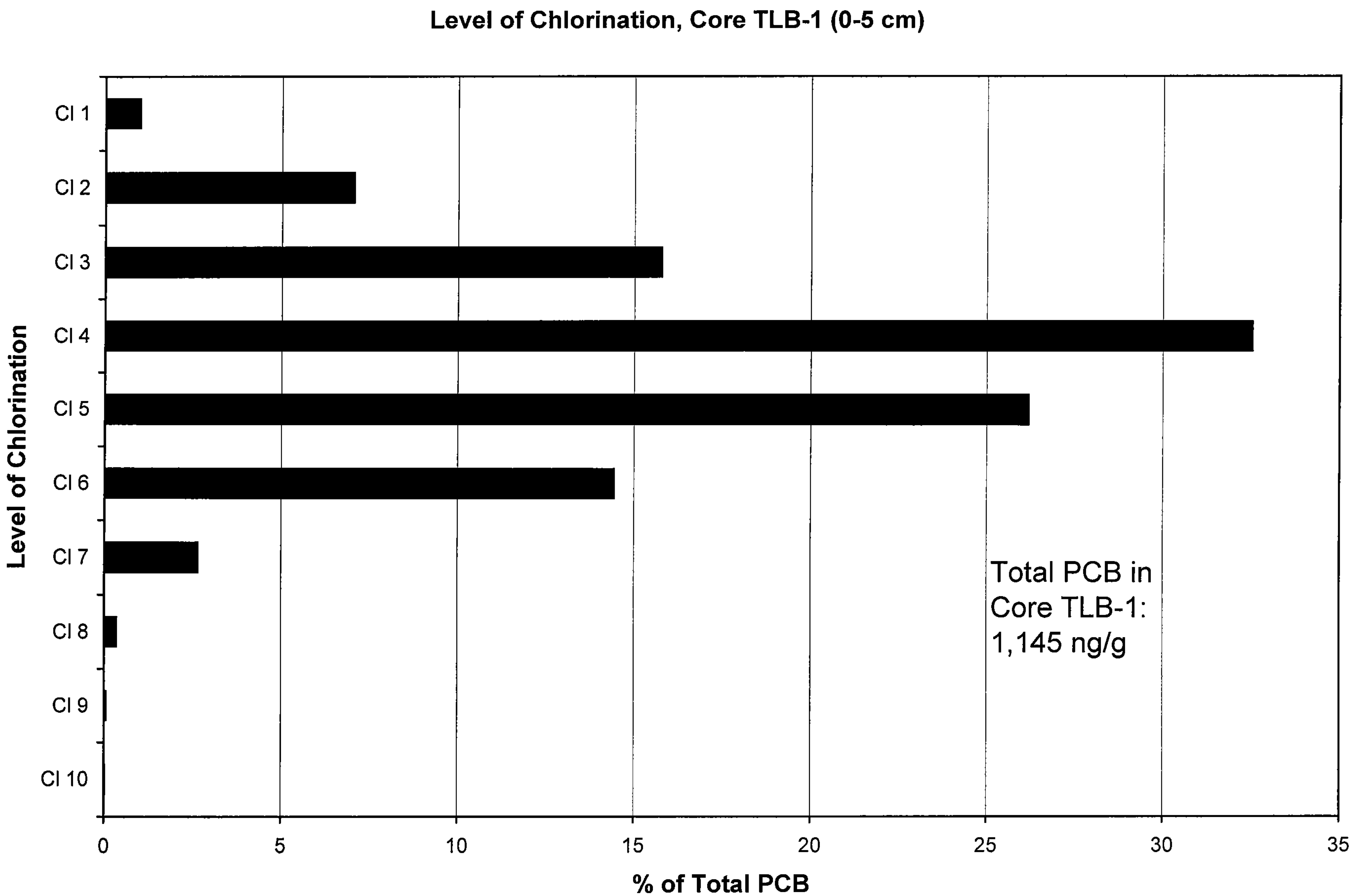


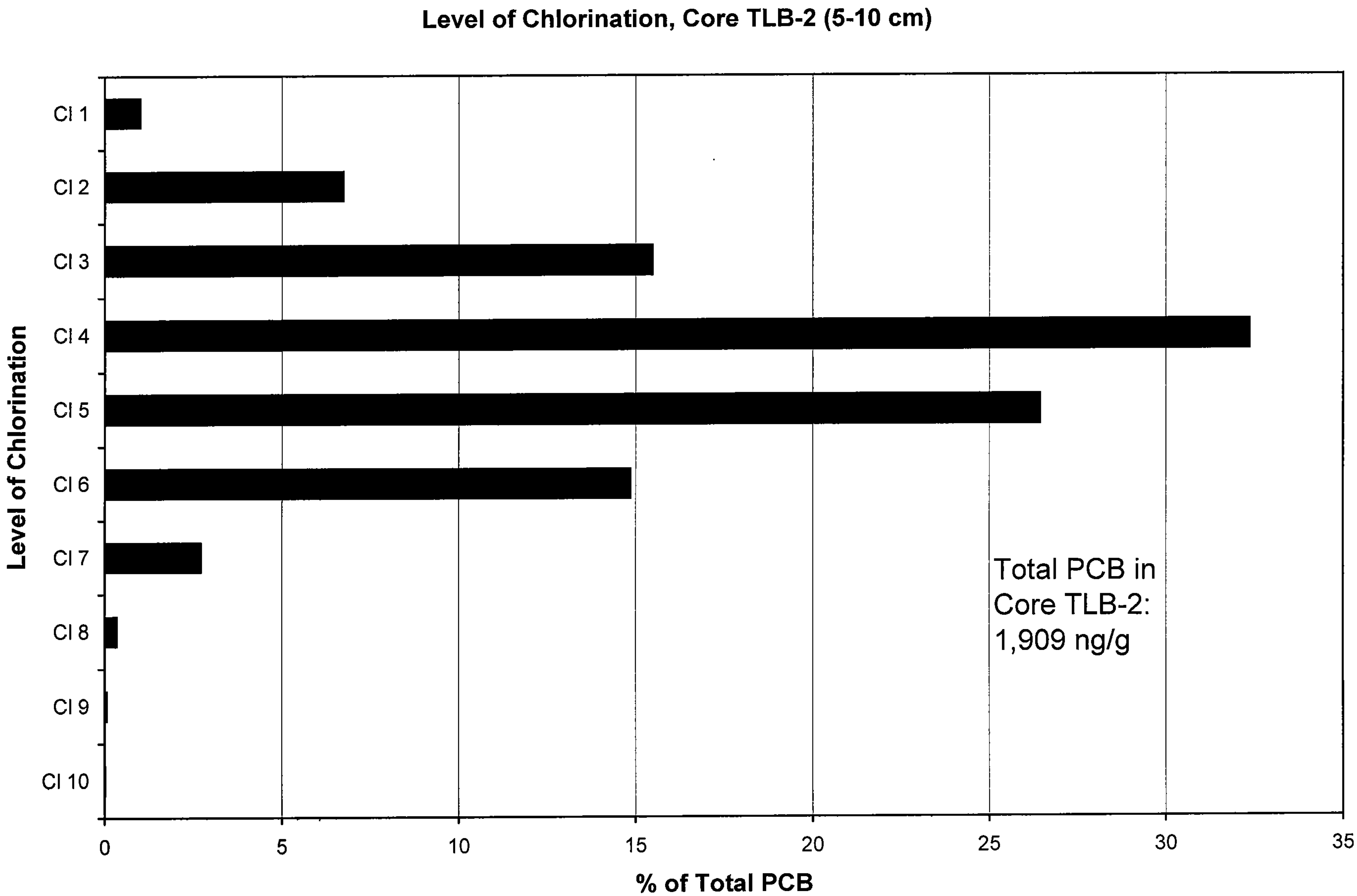
Level of Chlorination, Core TLA-18 (85-90 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
% of Total PCB
Total PCB in Core TLA-18: 0.21 ng/g

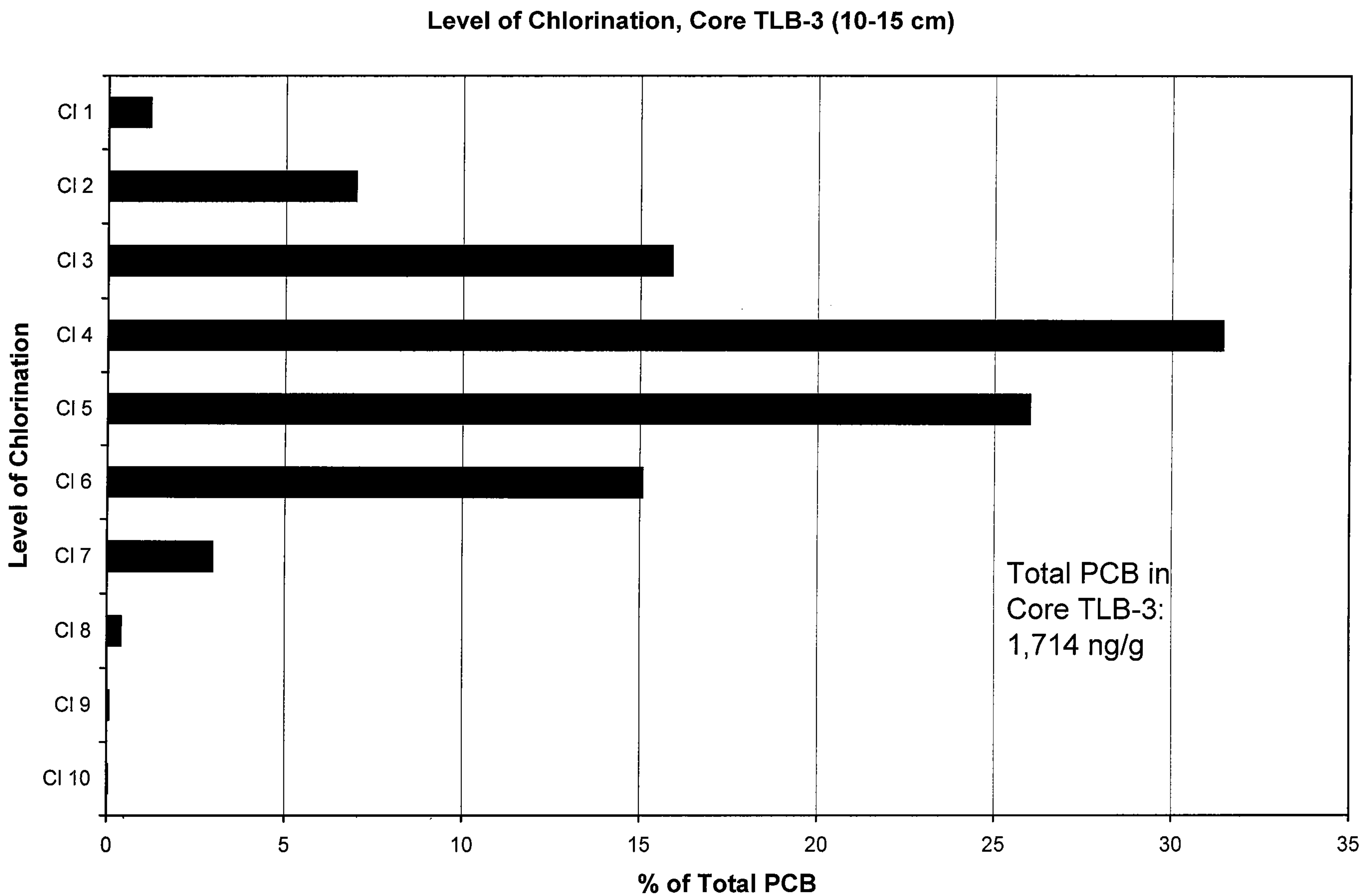

Level of Chlorination, Core TLA-19 (90-95 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Total PCB in Core TLA-19: 0.37 ng/g
0
10
20
30
40
50
60
% of Total PCB

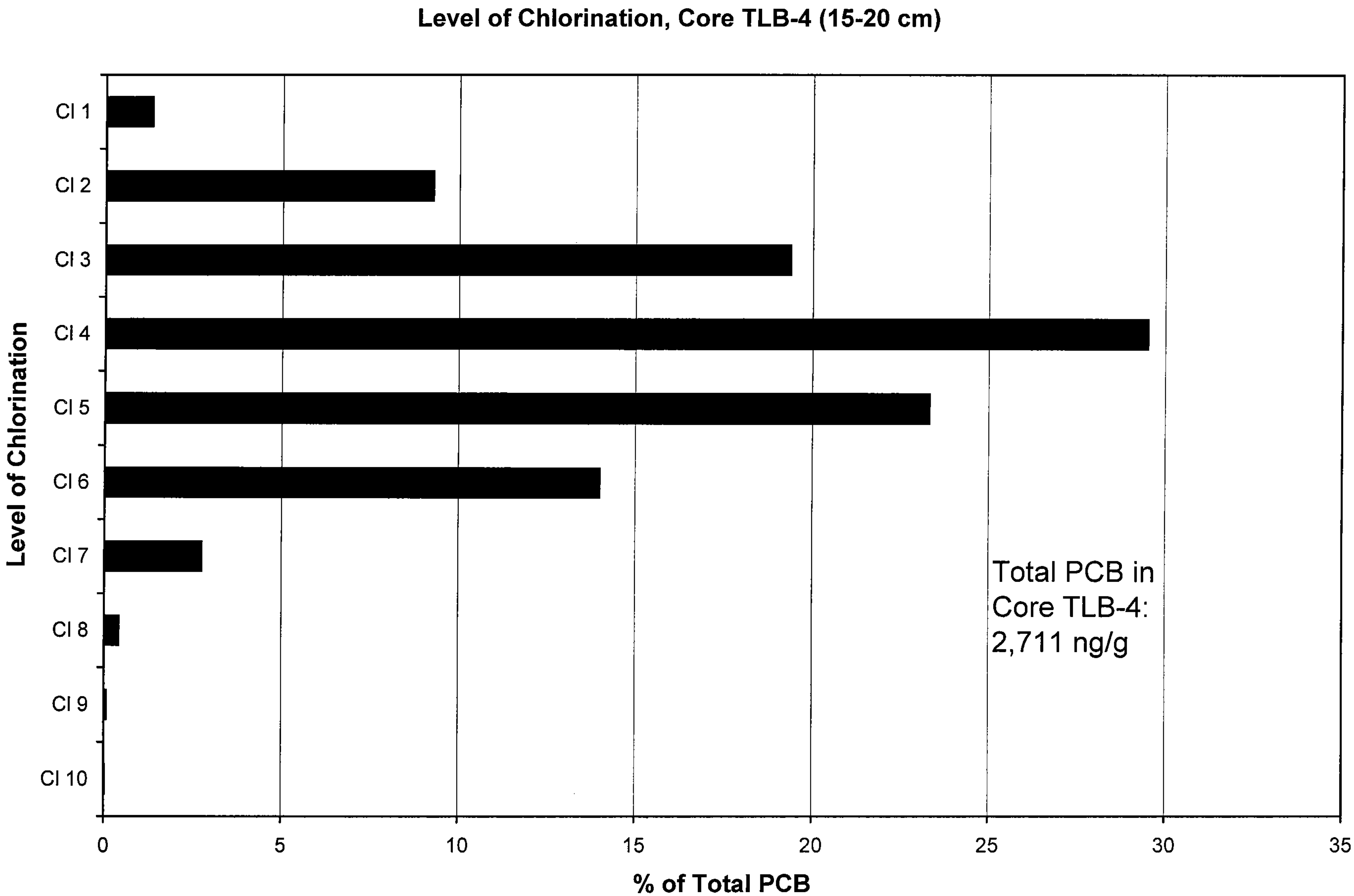


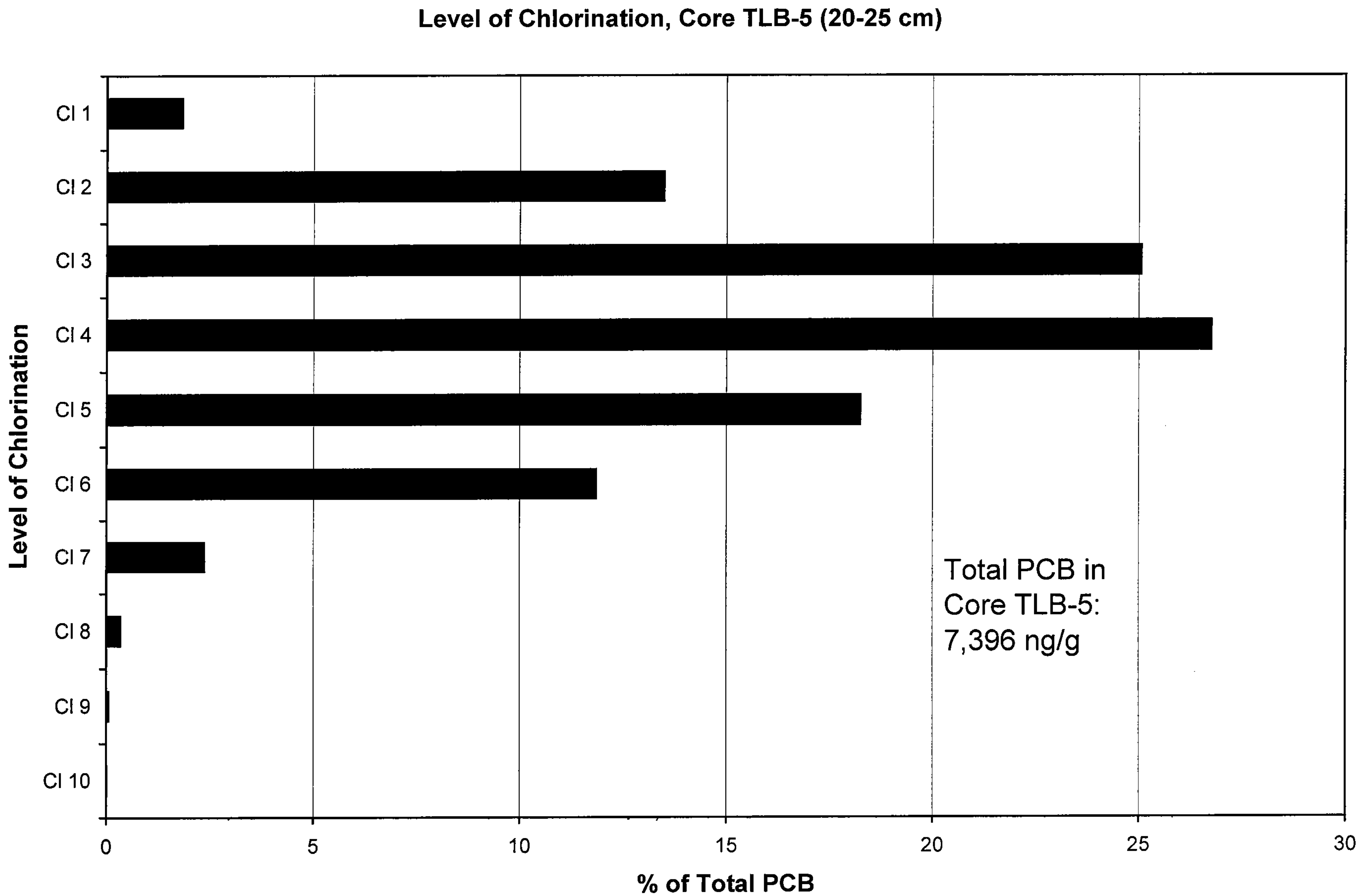
Level of Chlorination, Core TLA-20 (95-100 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
50
% of Total PCB
Total PCB in
Core TLA-20:
0.24 ng/g


Level of Chlorination, Core TLB-1 (0-5 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TLB-1:
1,145 ng/g

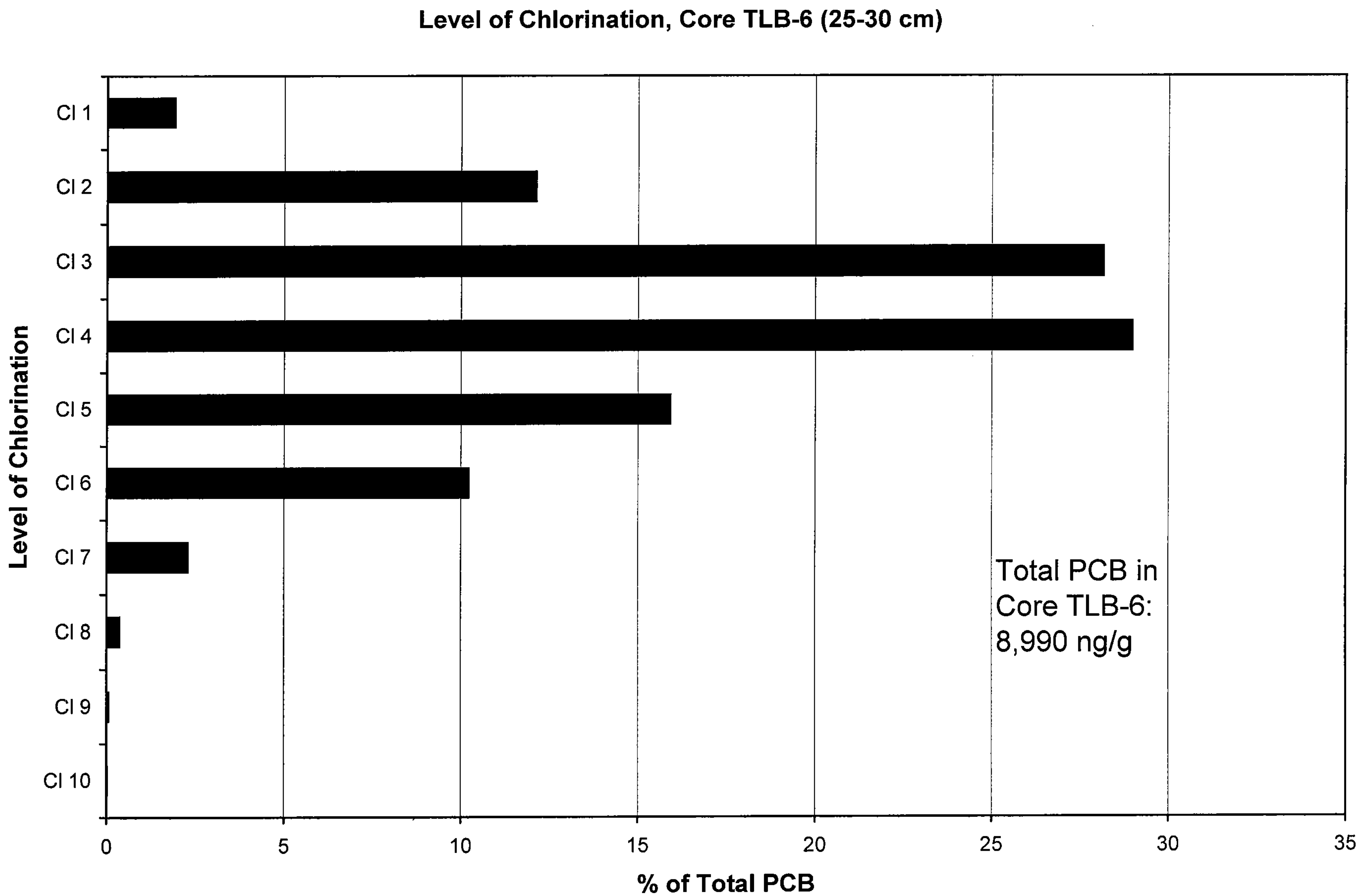

Level of Chlorination, Core TLB-2 (5-10 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in Core TLB-2: 1,909 ng/g


Level of Chlorination, Core TLB-3 (10-15 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TLB-3:
1,714 ng/g


Level of Chlorination, Core TLB-4 (15-20 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in Core TLB-4: 2,711 ng/g

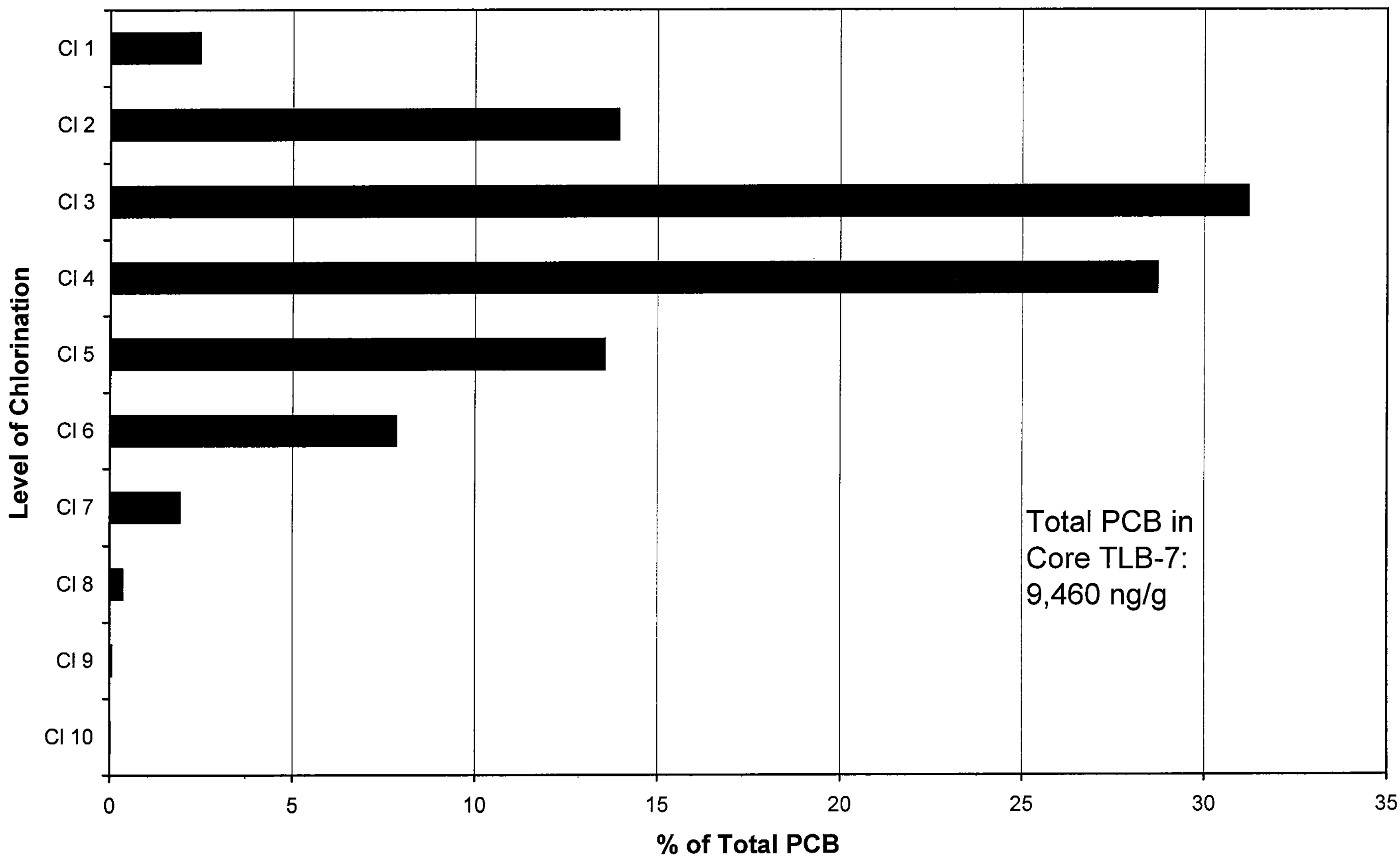


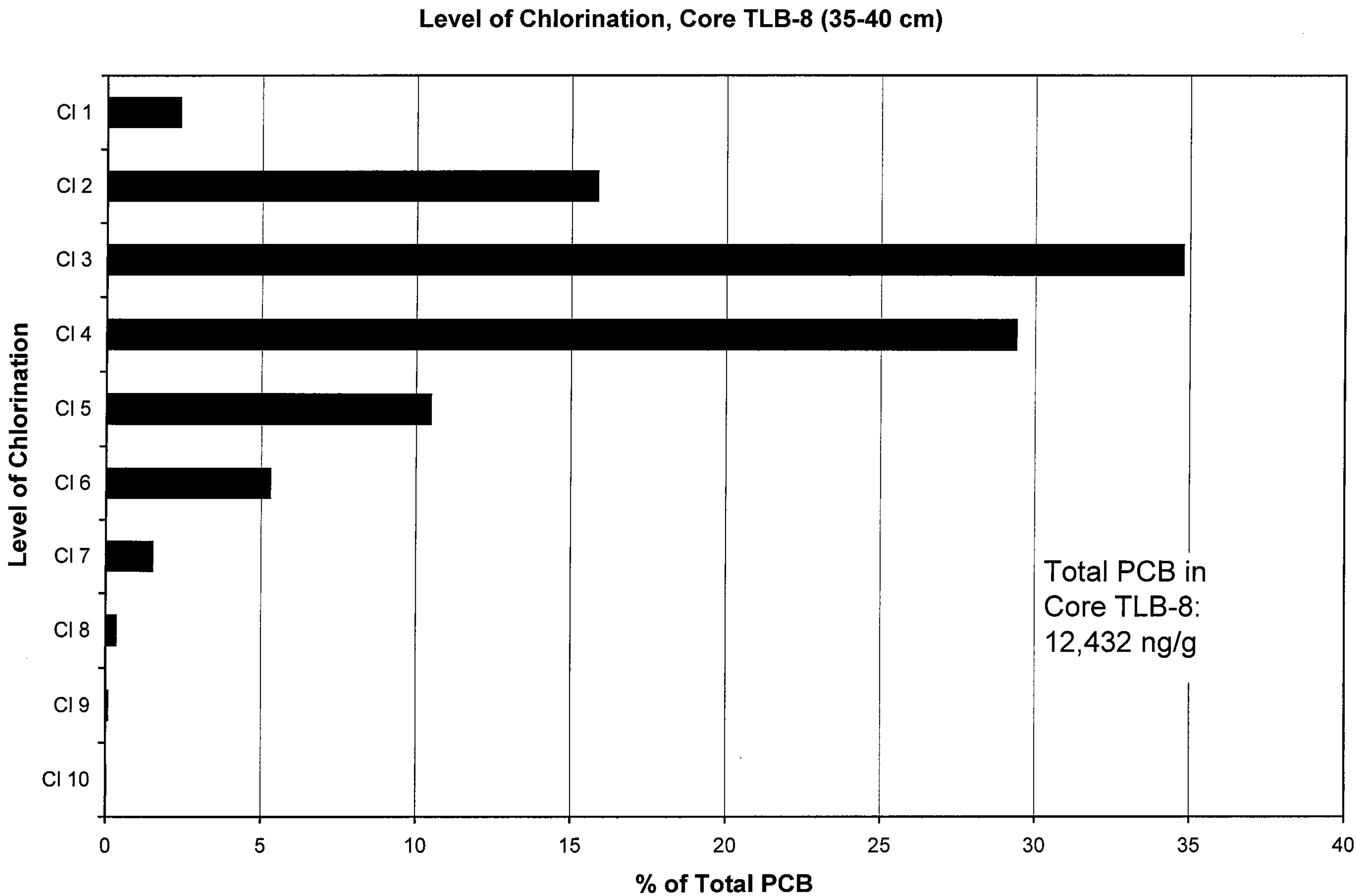
Level of Chlorination, Core TLB-5 (20-25 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
% of Total PCB
Total PCB in
Core TLB-5:
7,396 ng/g

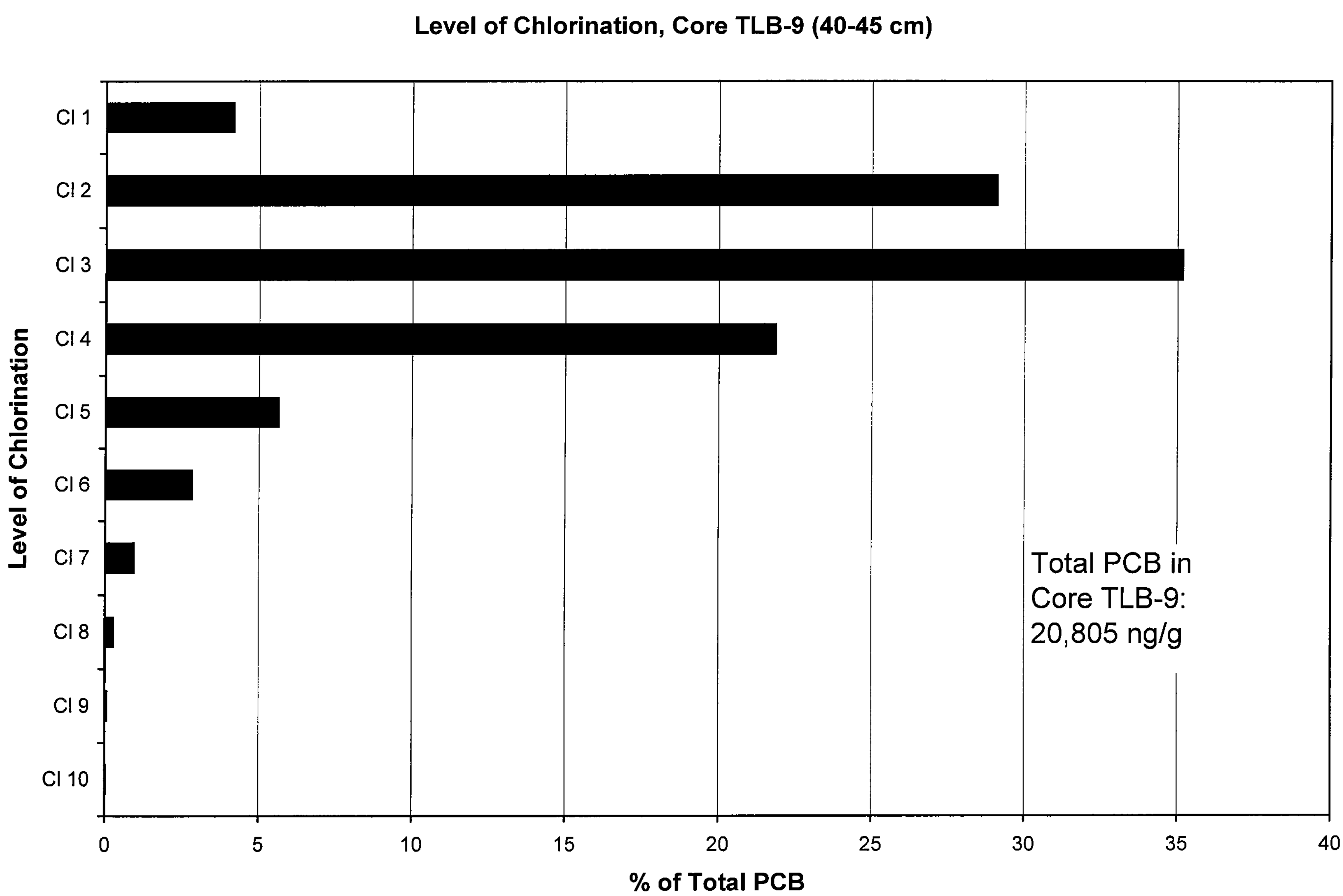


Level of Chlorination, Core TLB-6 (25-30 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TLB-6:
8,990 ng/g

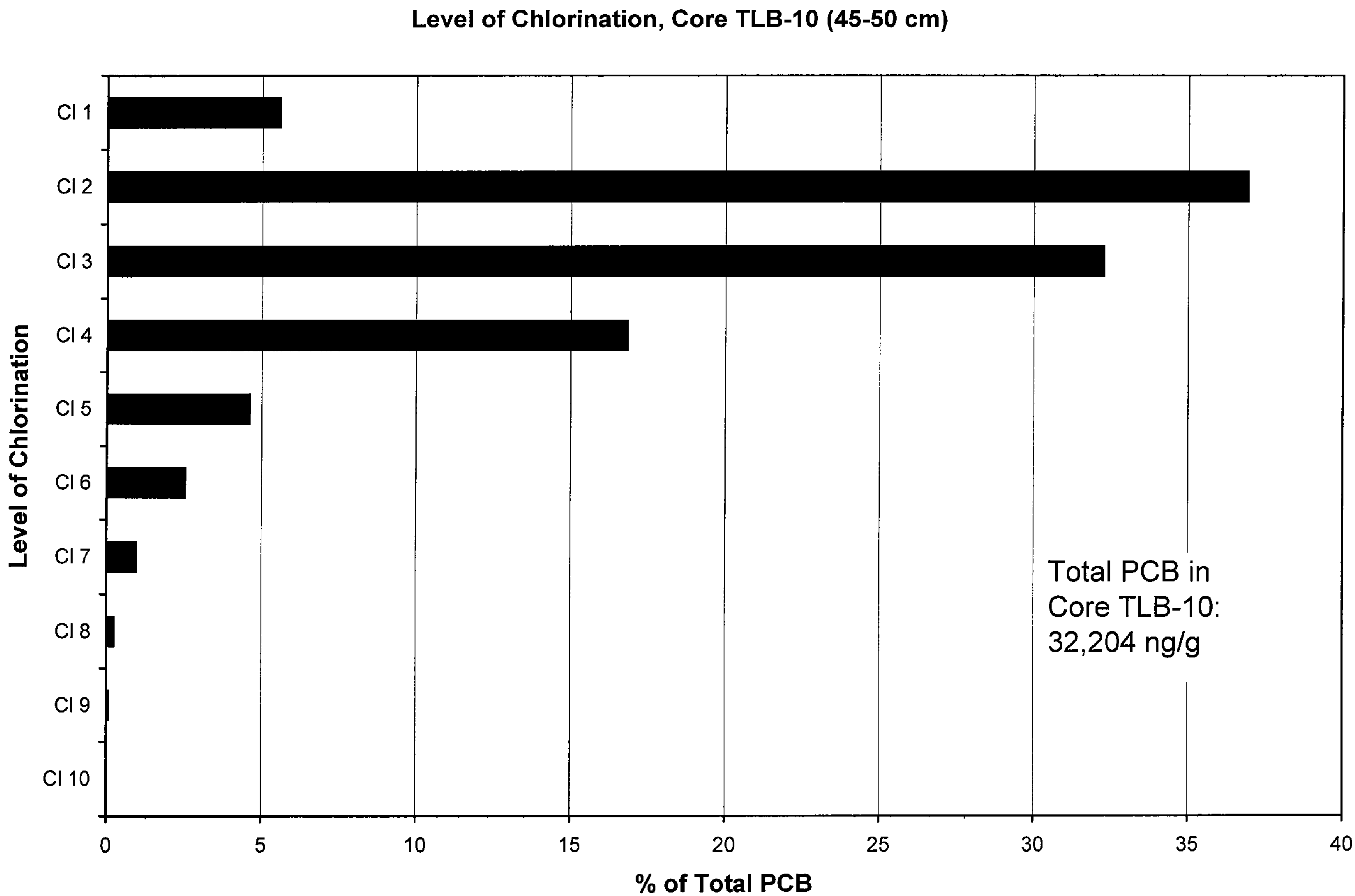
Level of Chlorination, Core TLB-7 (30-35 cm)



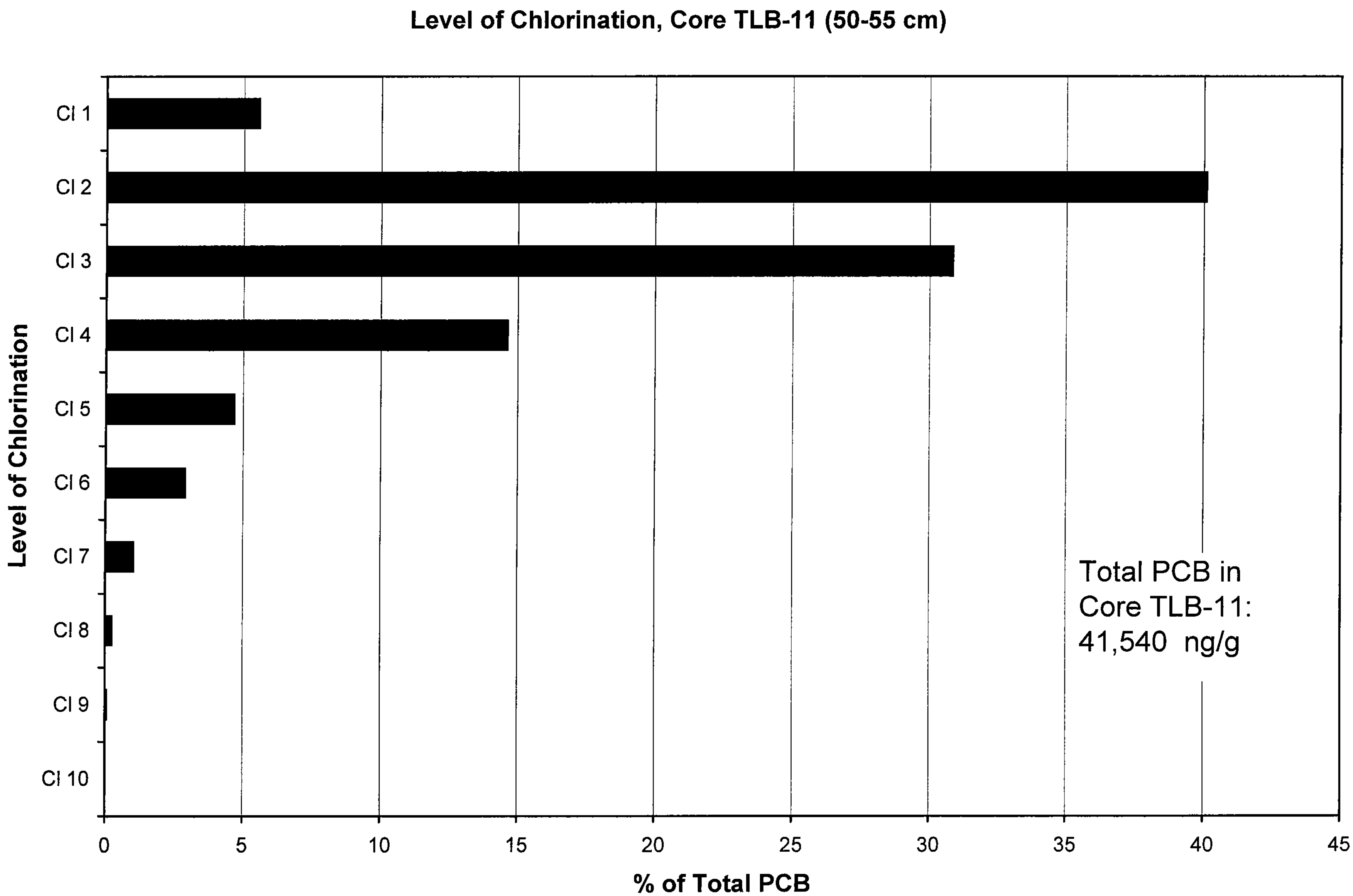

Level of Chlorination, Core TLB-8 (35-40 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in Core TLB-8: 12,432 ng/g



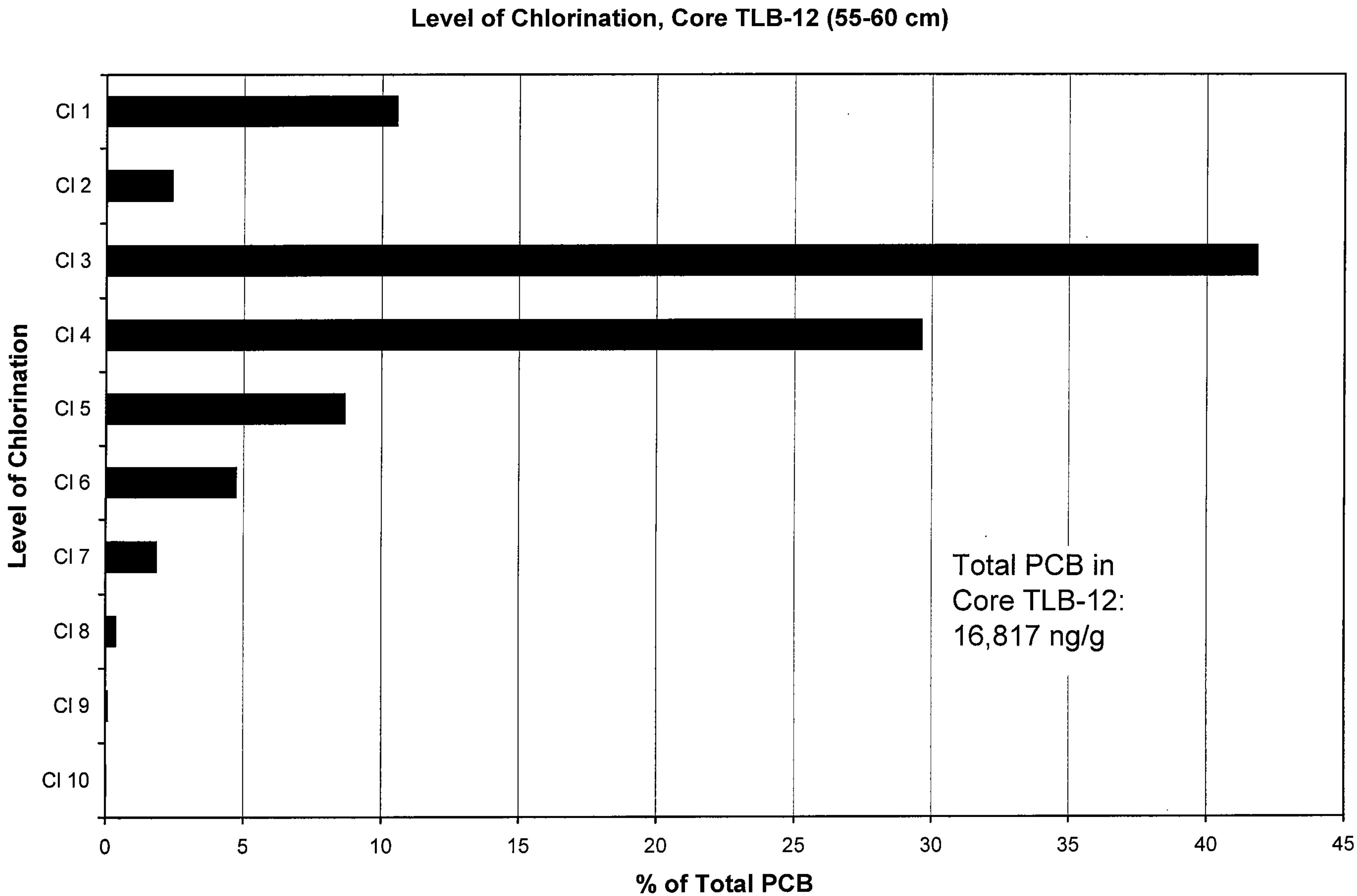
Level of Chlorination, Core TLB-9 (40-45 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in
Core TLB-9:
20,805 ng/g



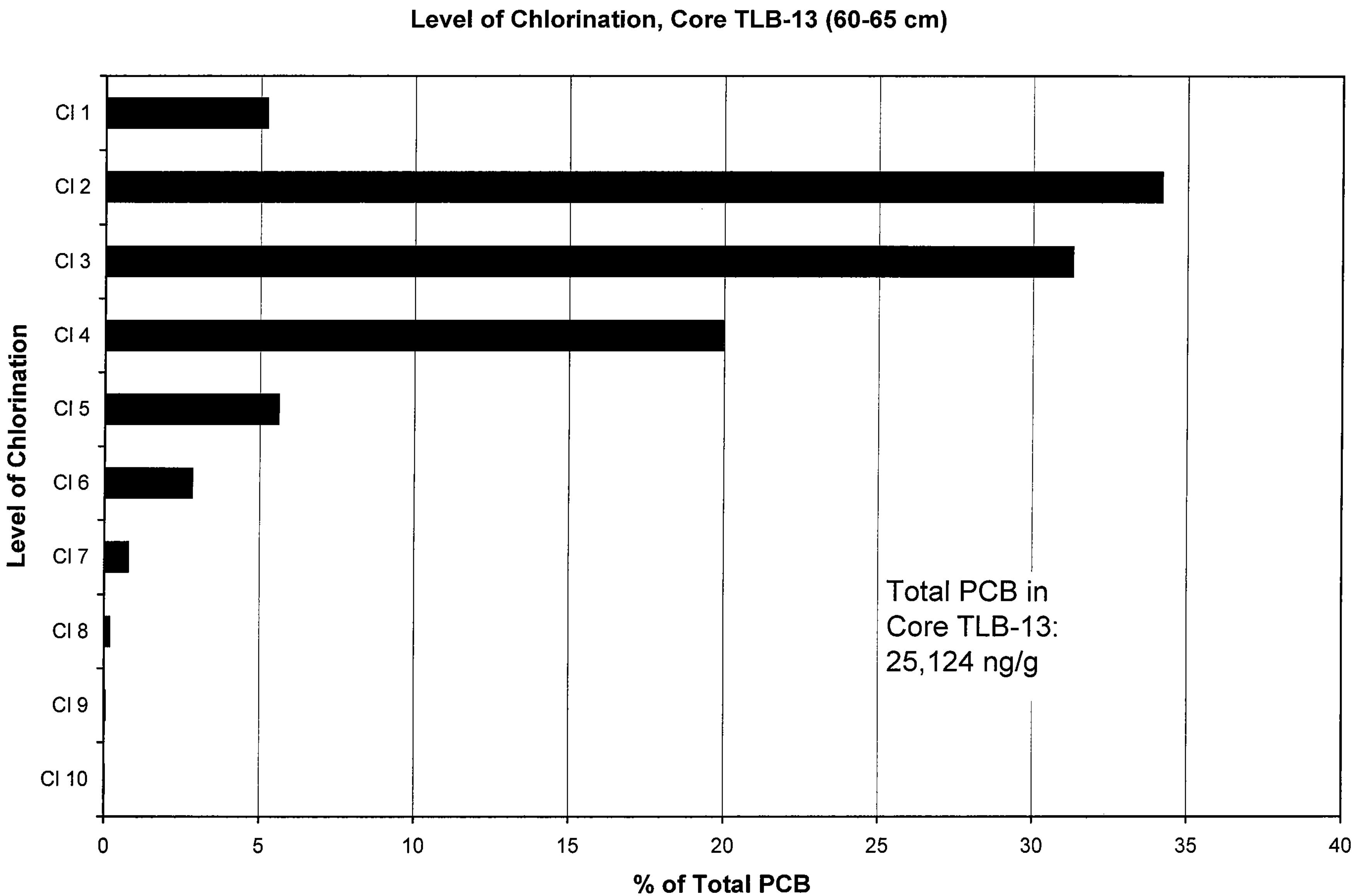
Level of Chlorination, Core TLB-10 (45-50 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in
Core TLB-10:
32,204 ng/g



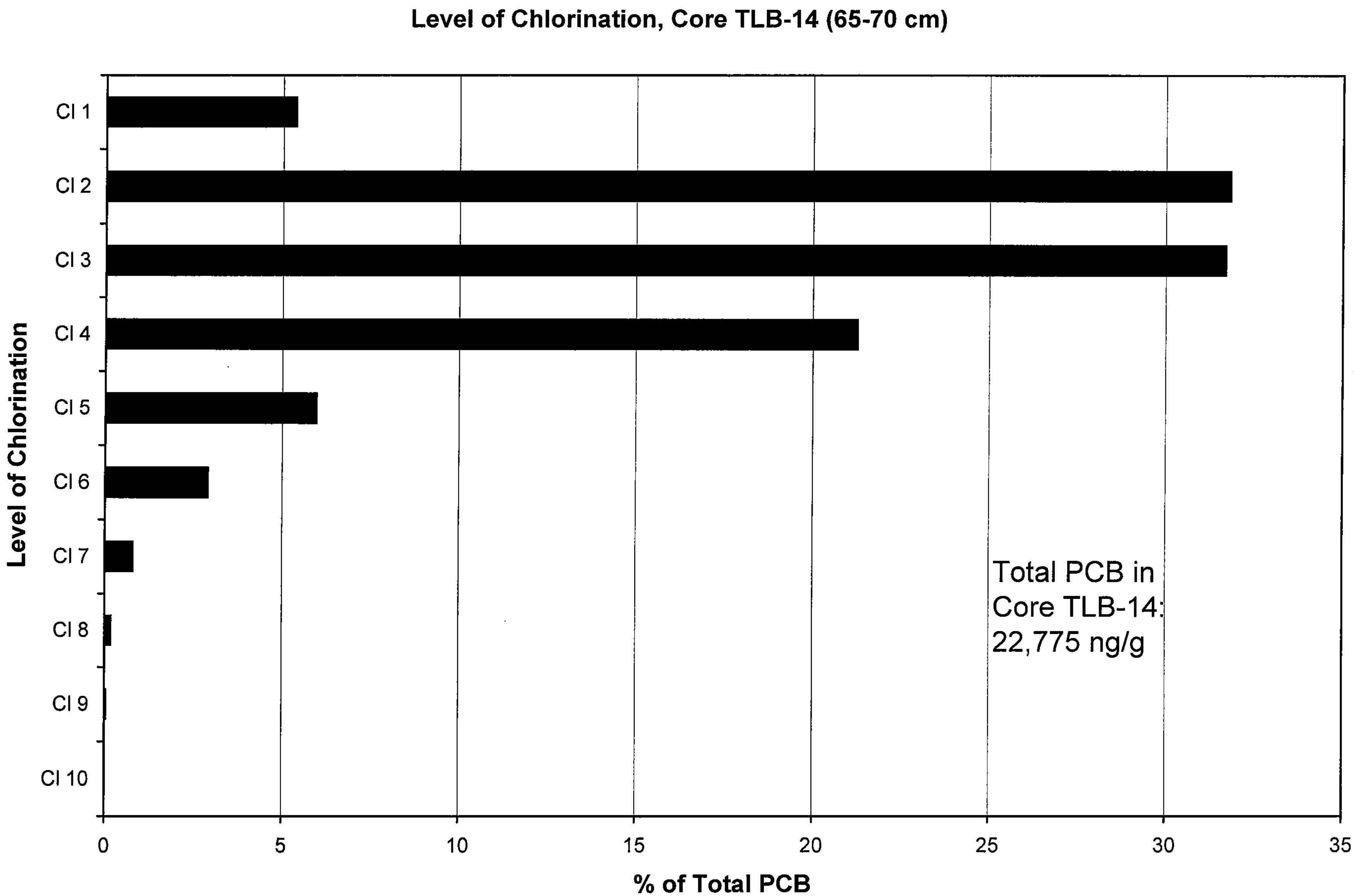
Level of Chlorination, Core TLB-11 (50-55 cm)
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Level of Chlorination
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core TLB-11:
41,540 ng/g

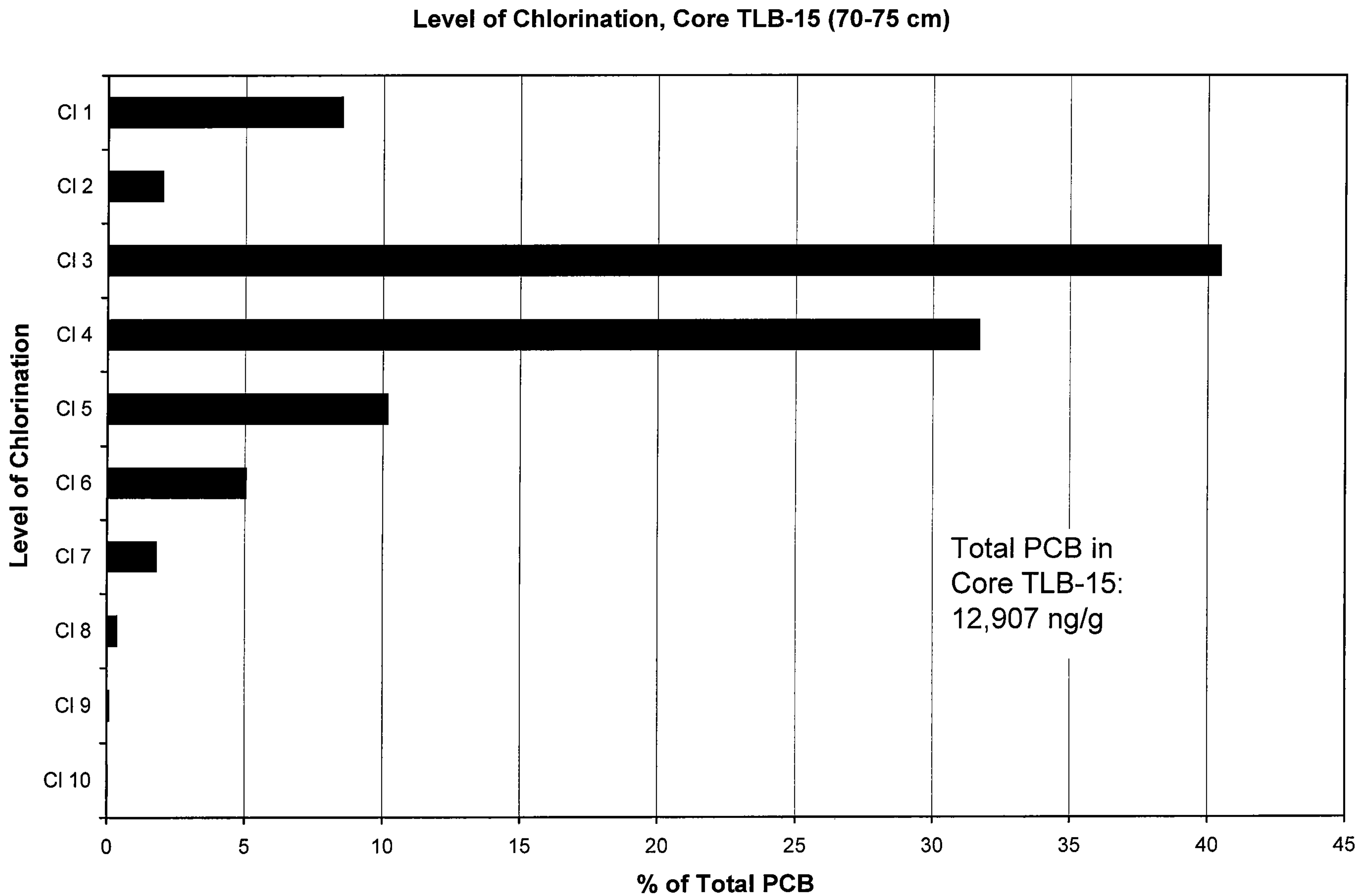


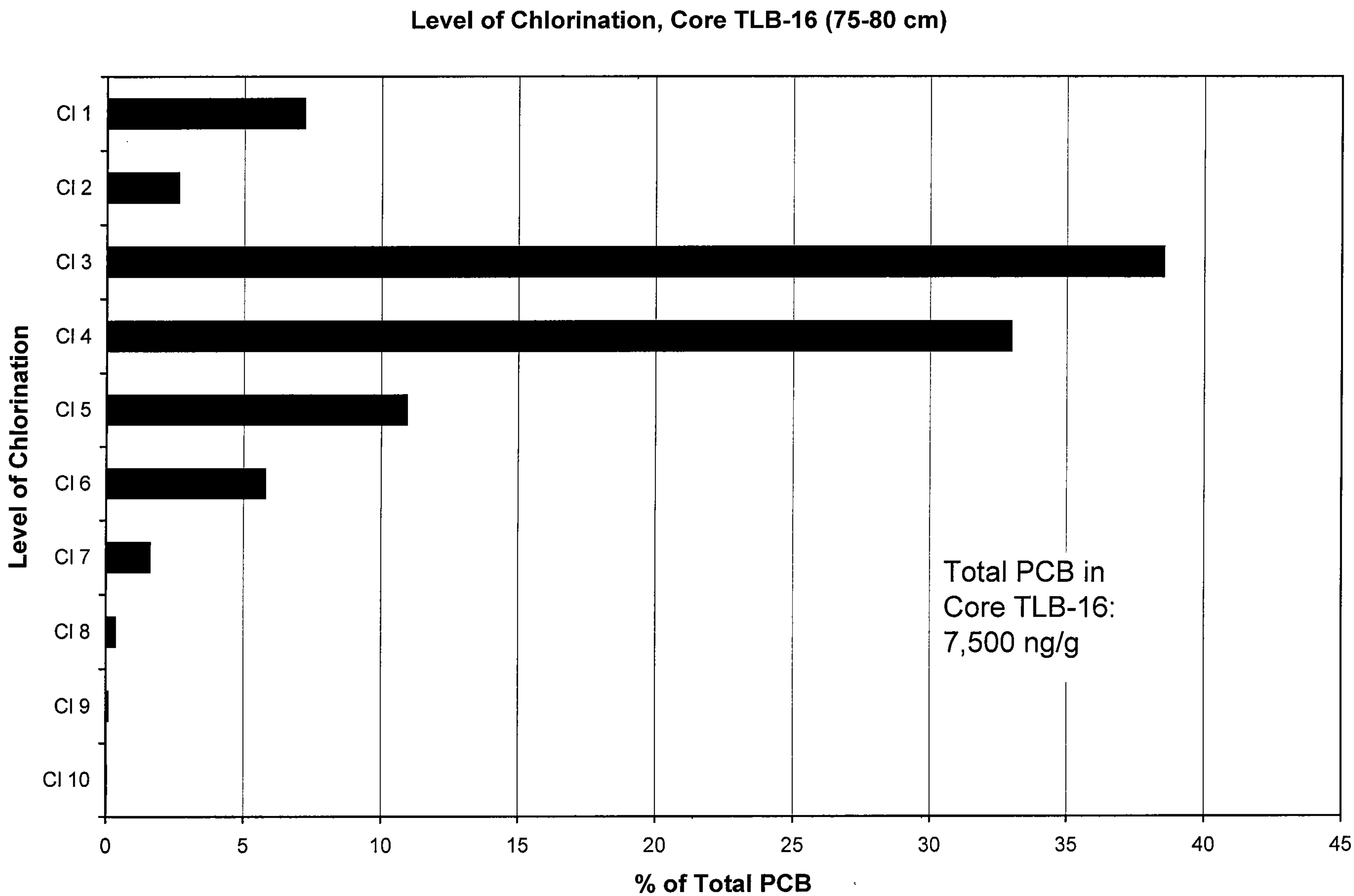
Level of Chlorination, Core TLB-12 (55-60 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core TLB-12:
16,817 ng/g



Level of Chlorination, Core TLB-13 (60-65 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in
Core TLB-13:
25,124 ng/g

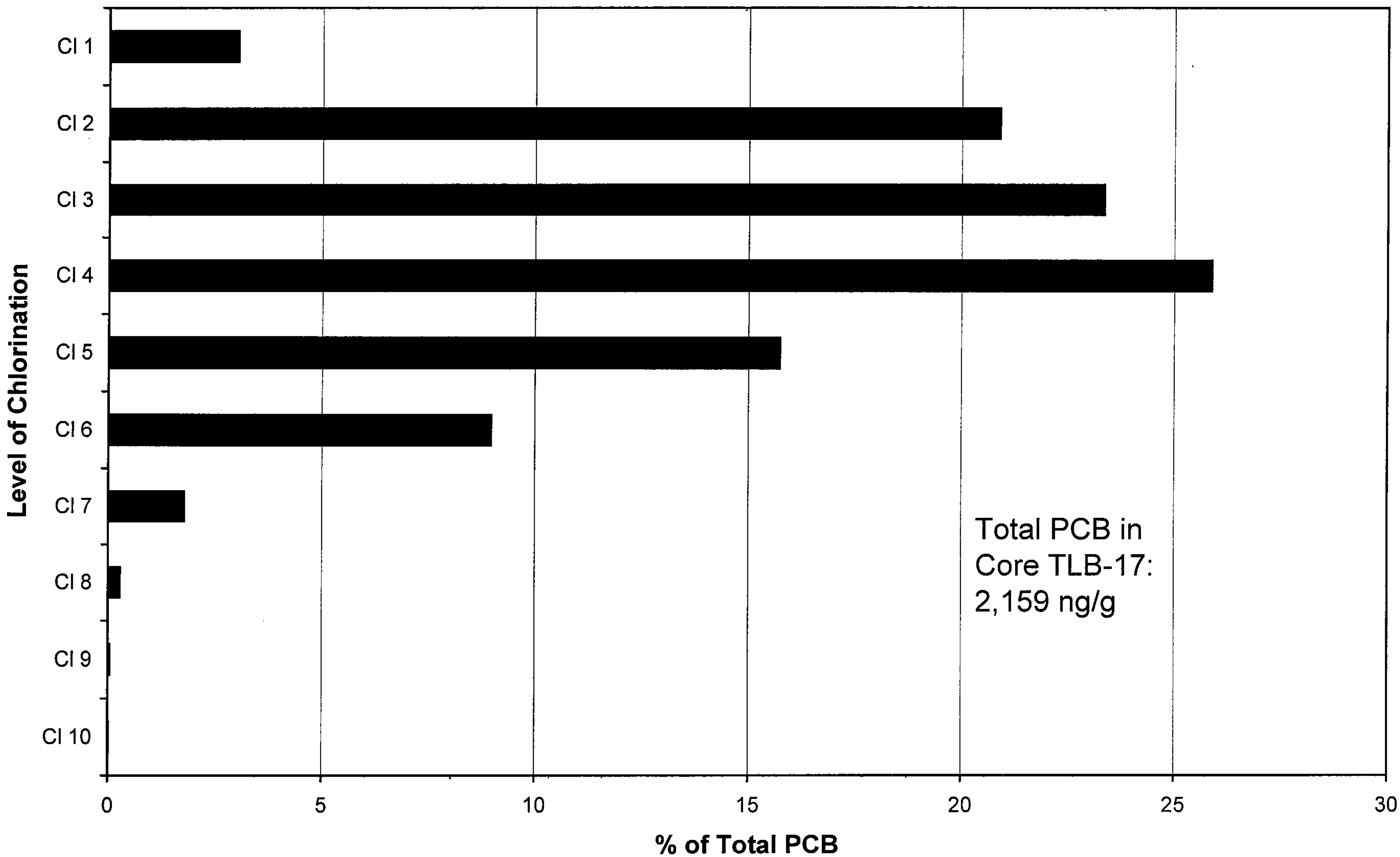

Level of Chlorination, Core TLB-14 (65-70 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in Core TLB-14: 22,775 ng/g

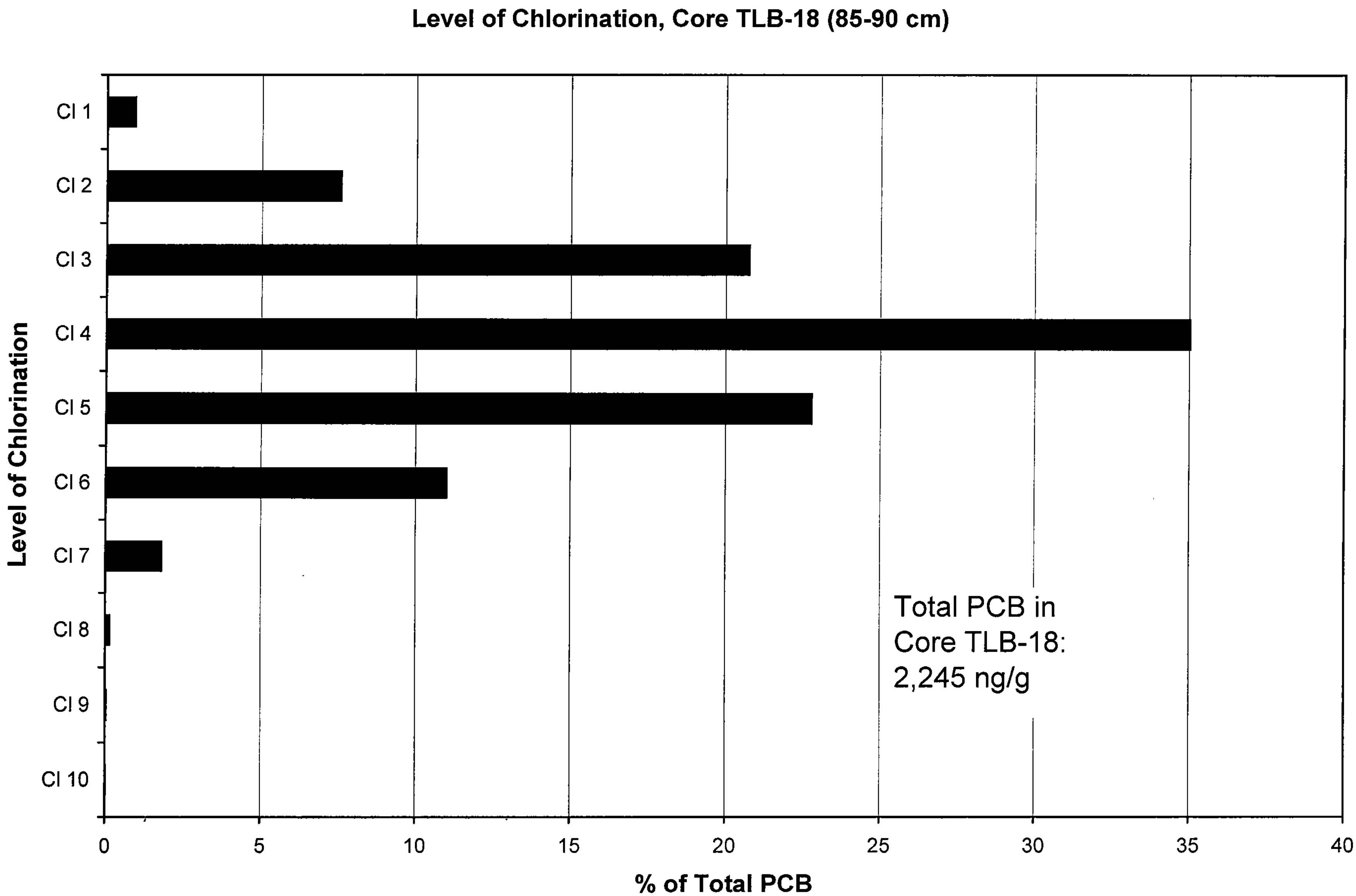

Level of Chlorination, Core TLB-15 (70-75 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core TLB-15:
12,907 ng/g

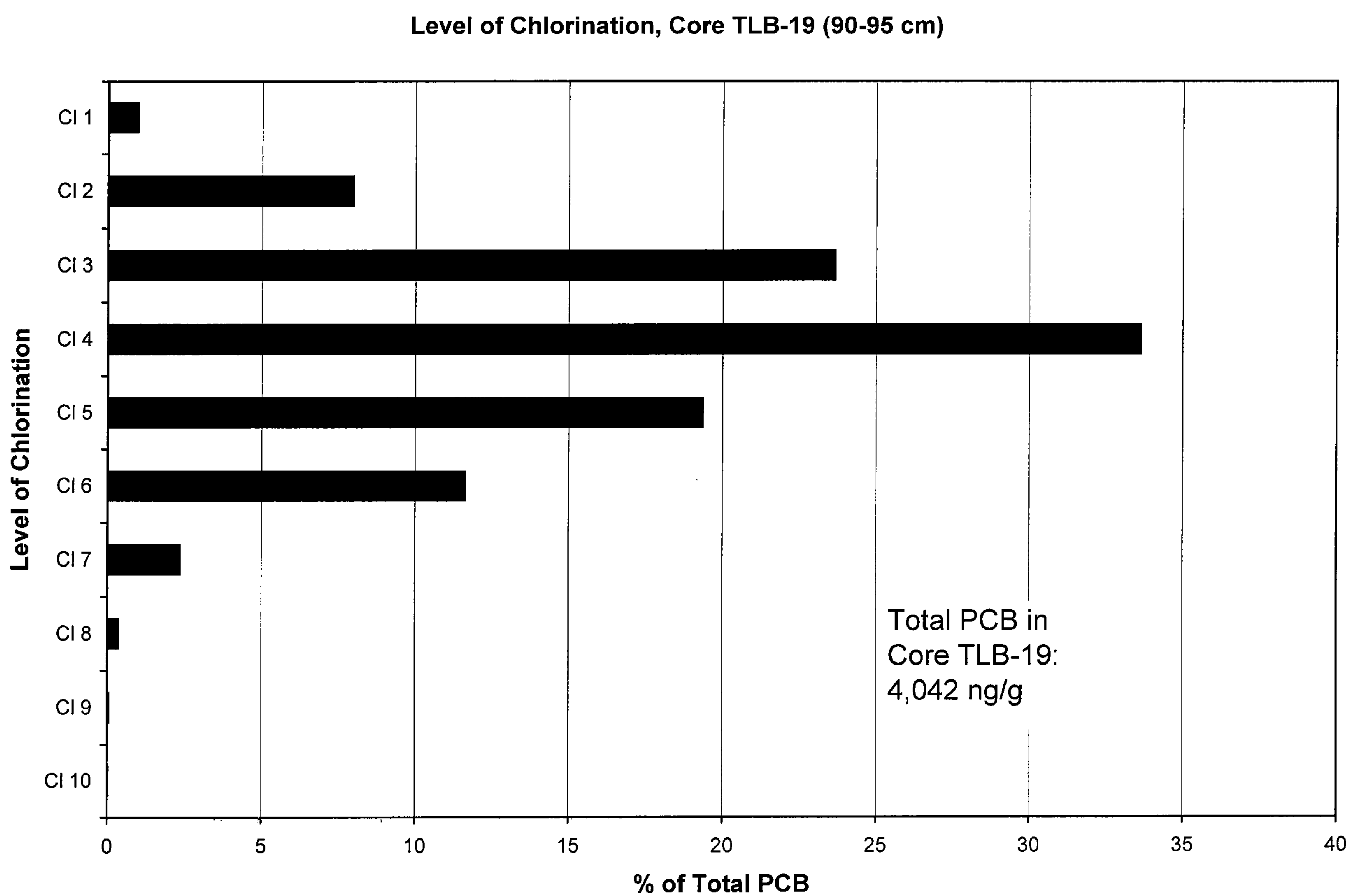


Level of Chlorination, Core TLB-16 (75-80 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core TLB-16:
7,500 ng/g

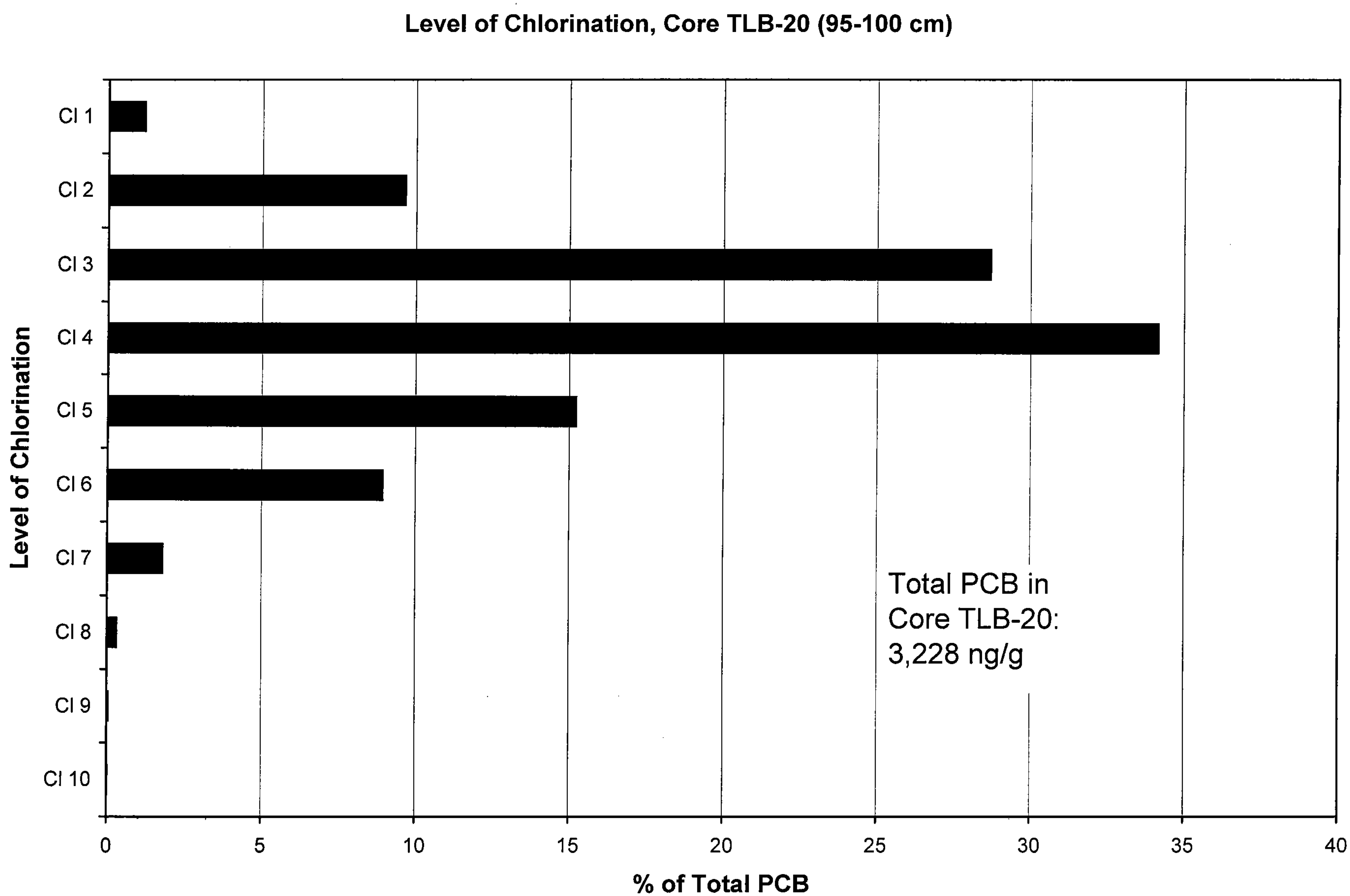
Level of Chlorination, Core TLB-17 (80-85 cm)

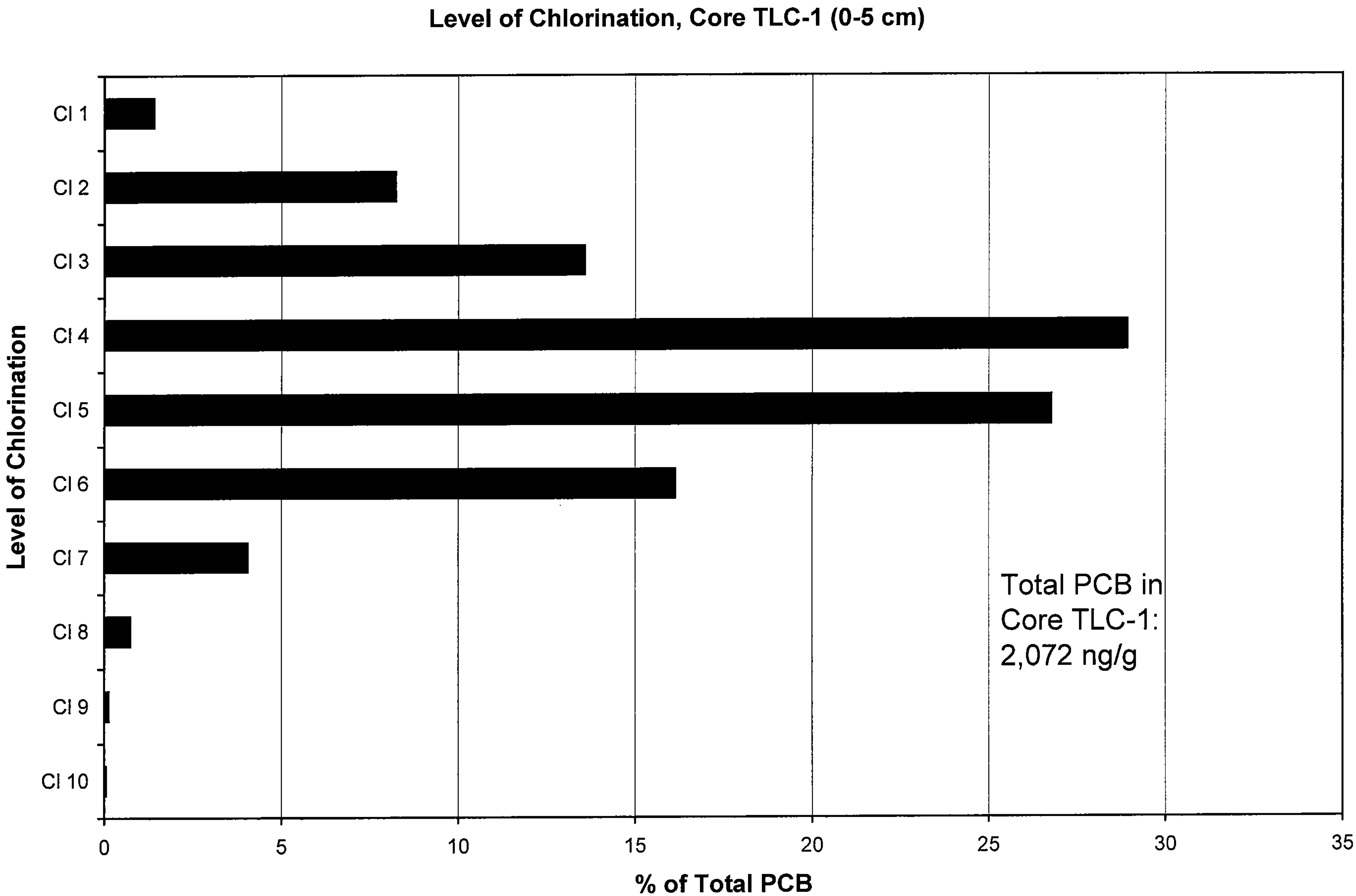



Level of Chlorination, Core TLB-18 (85-90 cm)
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Level of Chlorination
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in
Core TLB-18:
2,245 ng/g

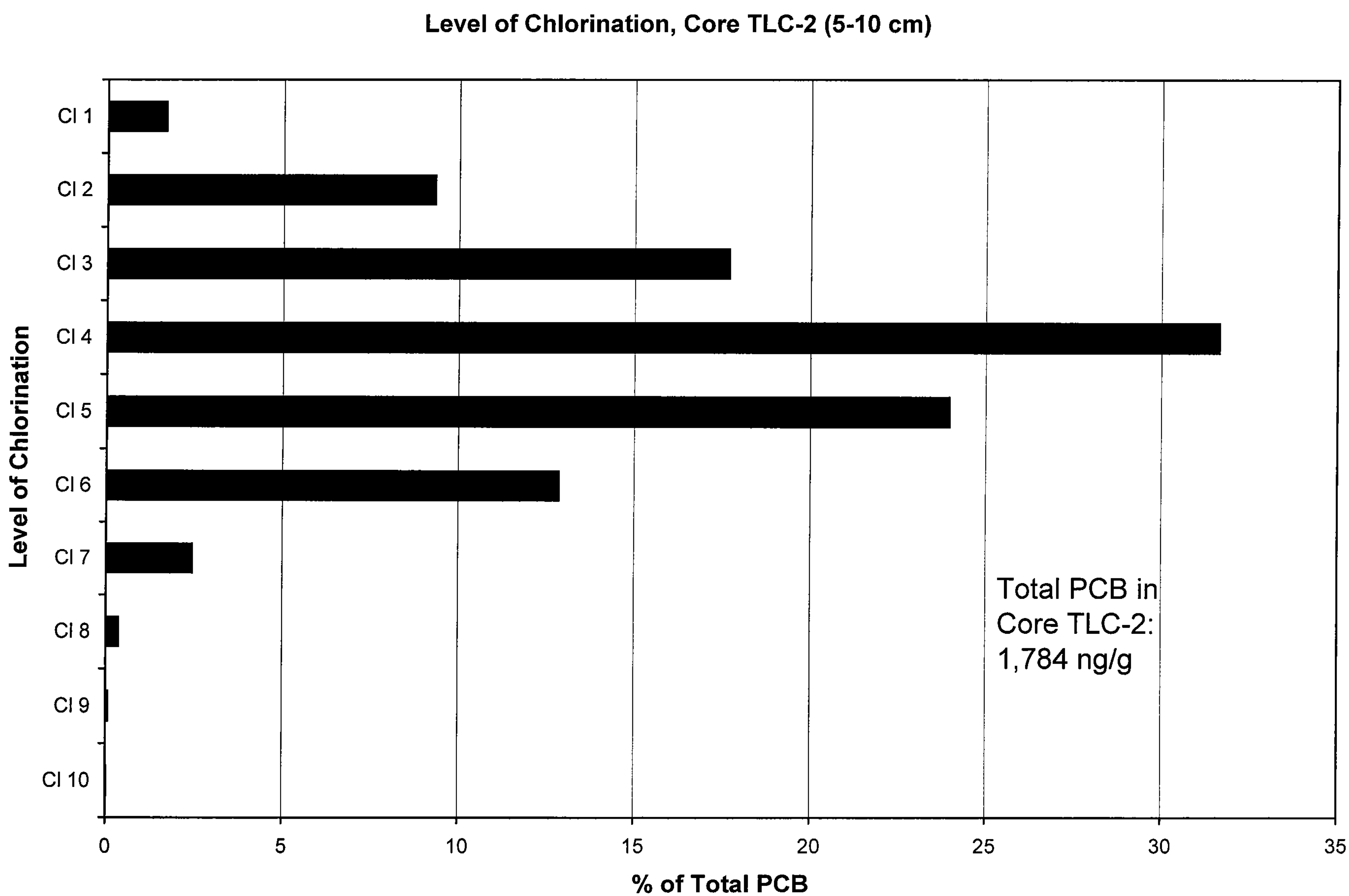


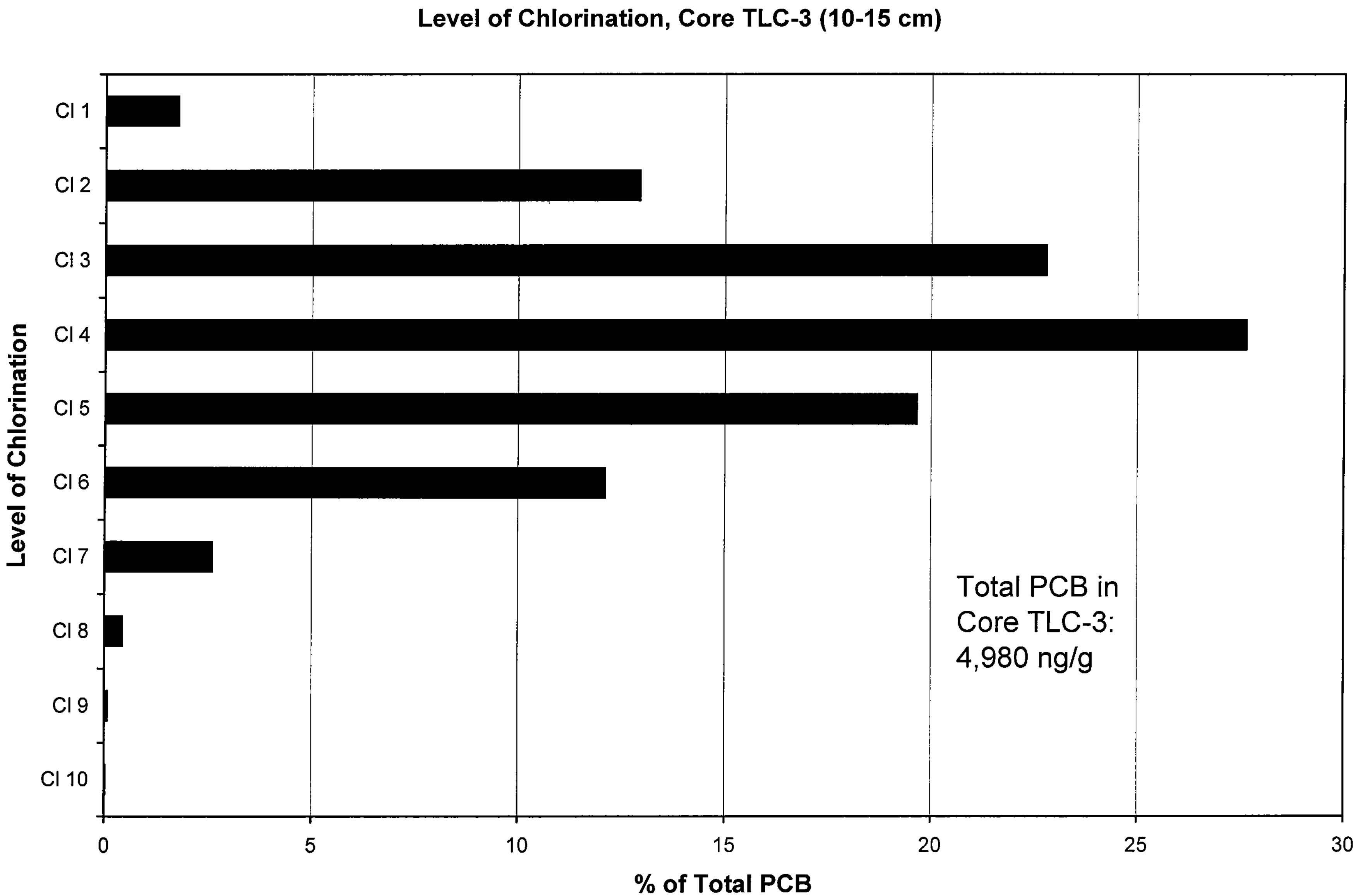
Level of Chlorination, Core TLB-19 (90-95 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in
Core TLB-19:
4,042 ng/g

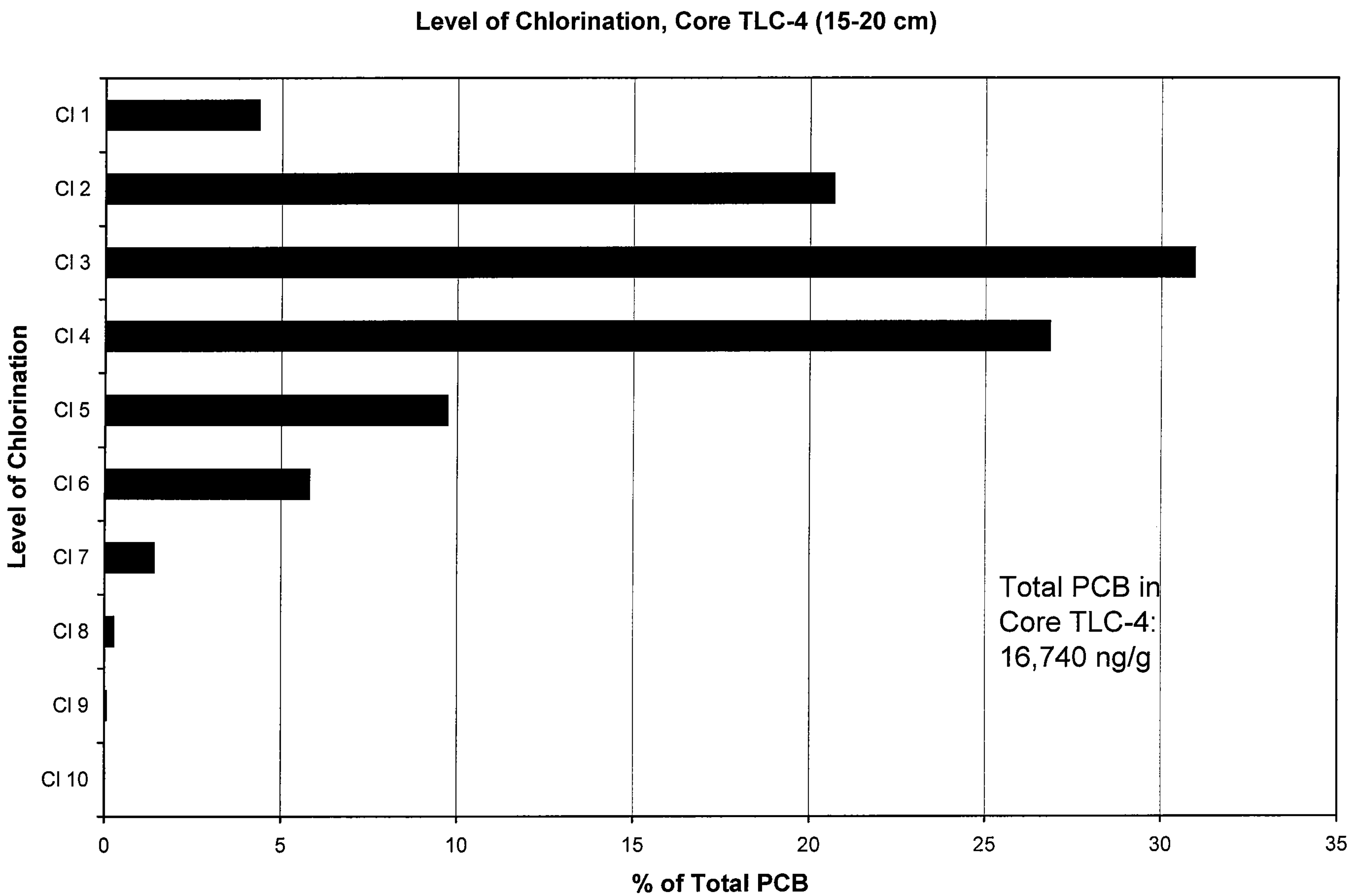

Level of Chlorination, Core TLB-20 (95-100 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in
Core TLB-20:
3,228 ng/g

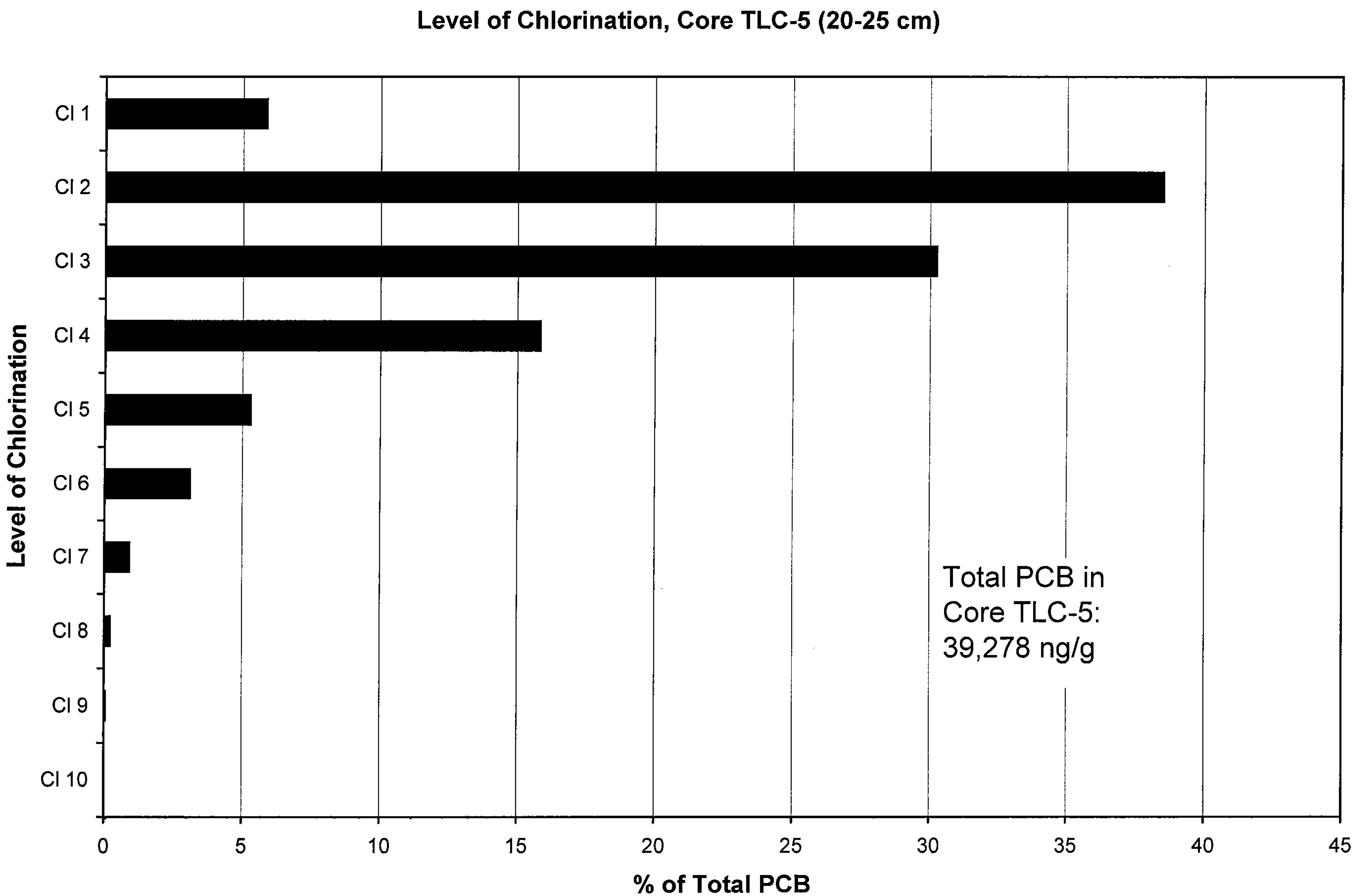


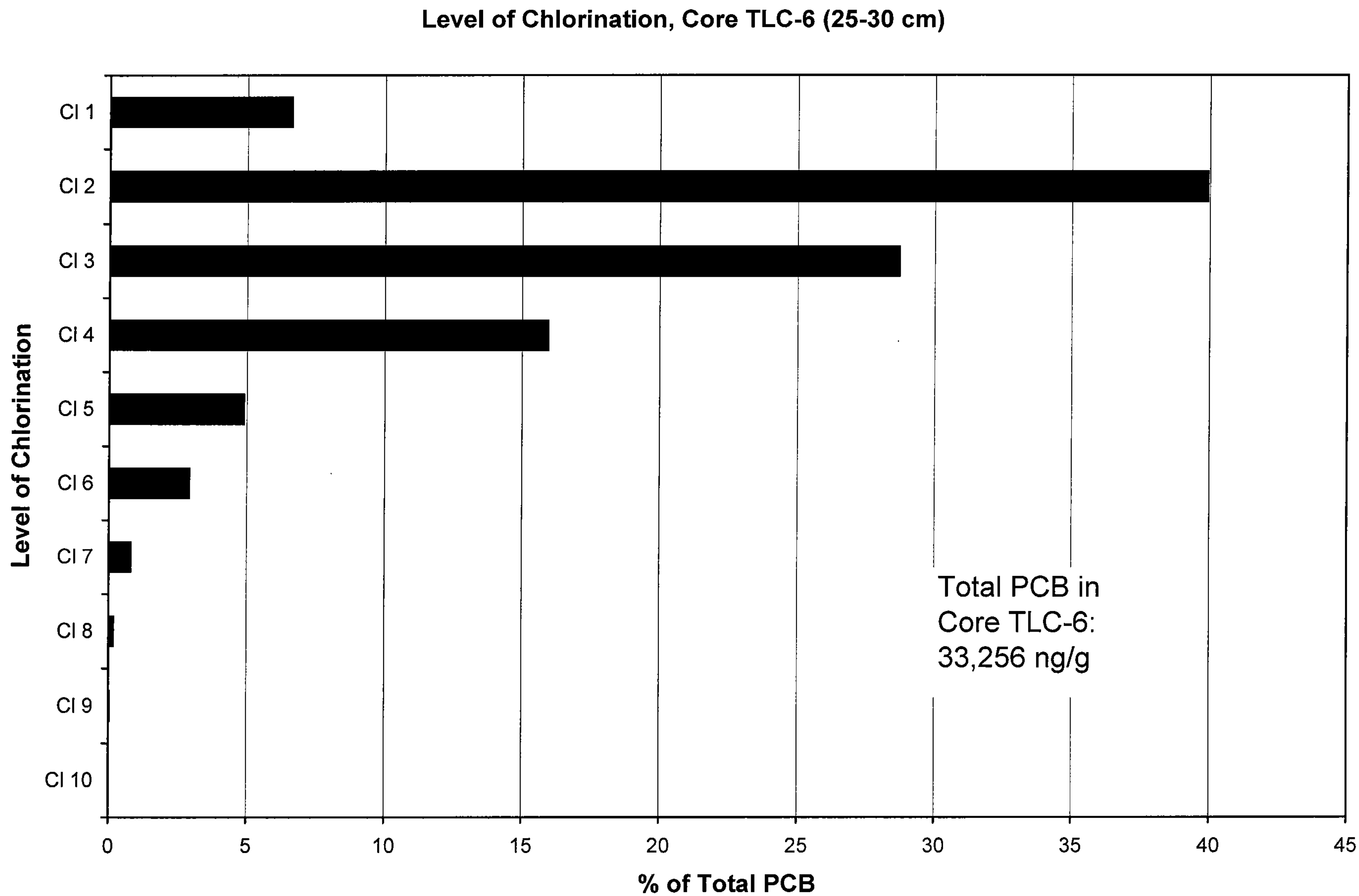
Level of Chlorination, Core TLC-1 (0-5 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in Core TLC-1: 2,072 ng/g

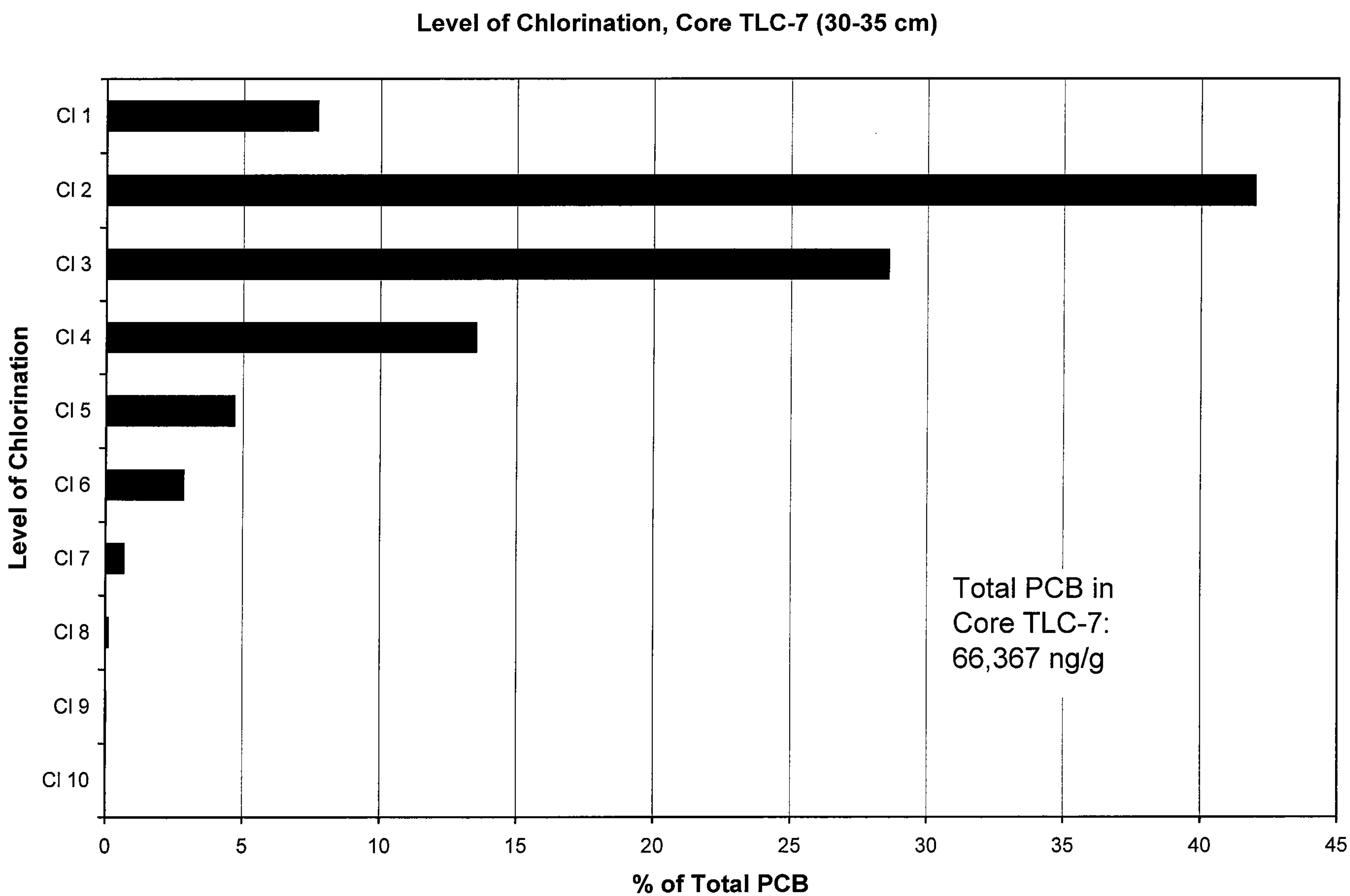

Level of Chlorination, Core TLC-2 (5-10 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TLC-2:
1,784 ng/g

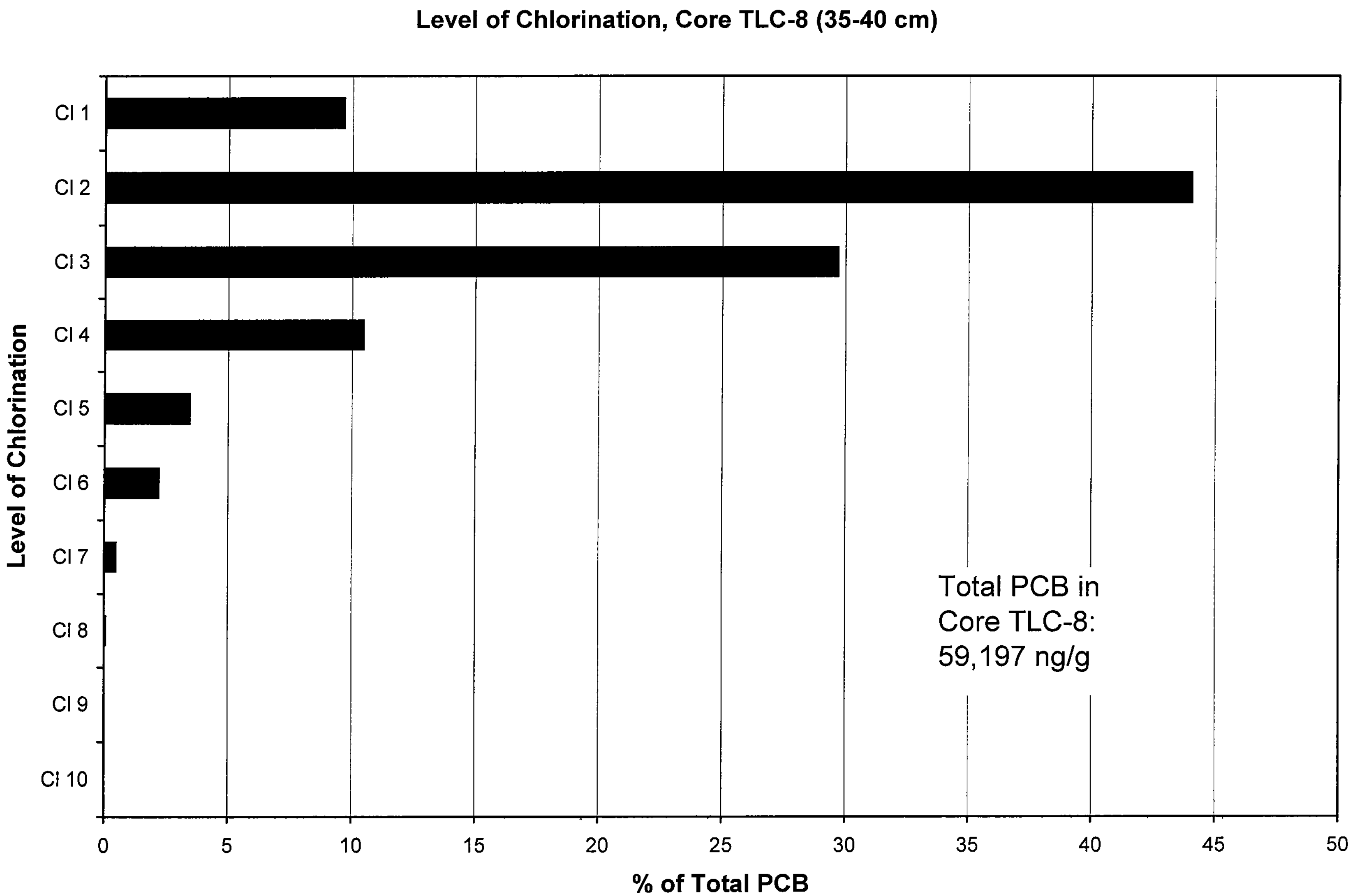

Level of Chlorination, Core TLC-3 (10-15 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
% of Total PCB
Total PCB in
Core TLC-3:
4,980 ng/g

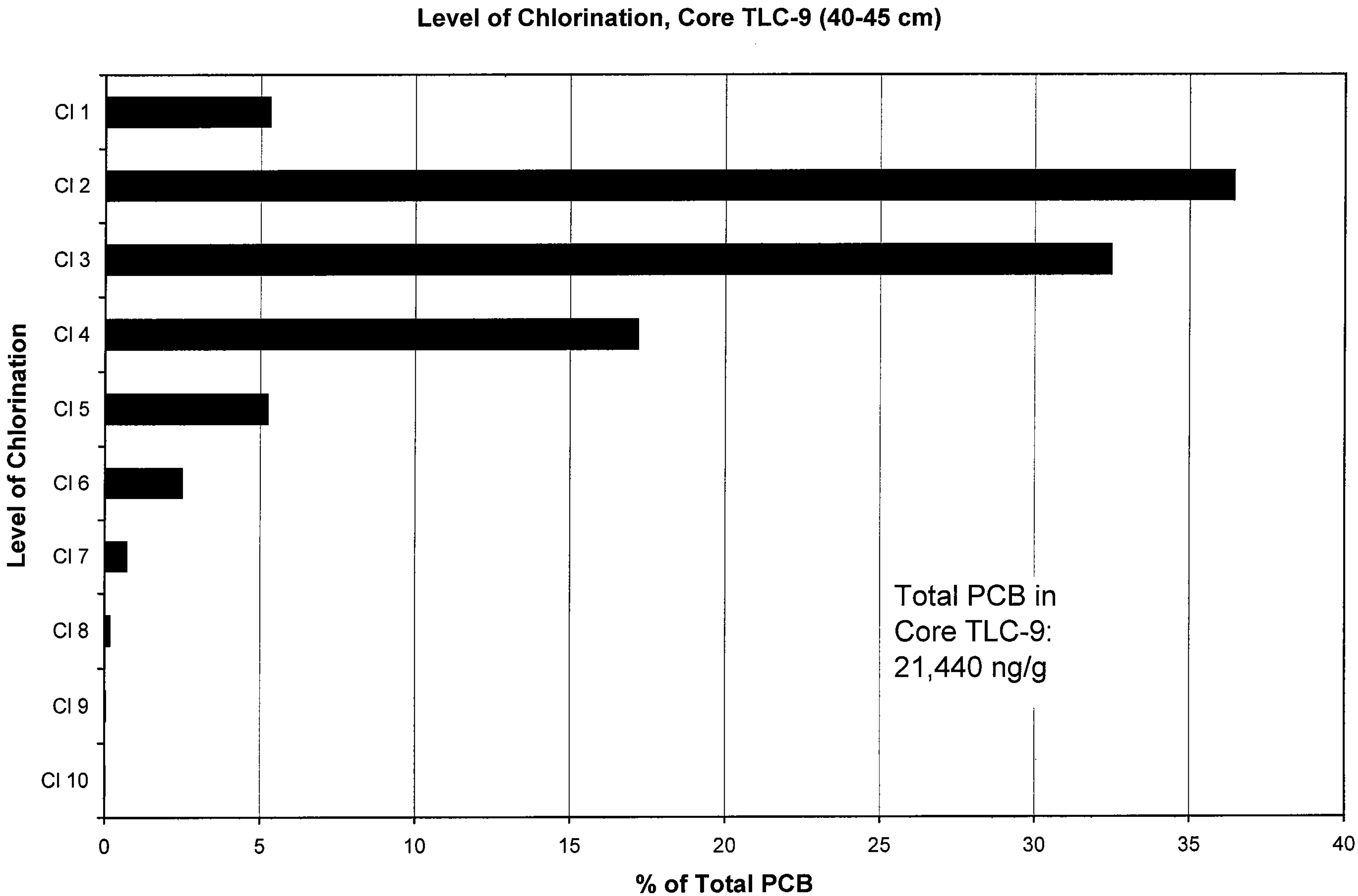

Level of Chlorination, Core TLC-4 (15-20 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TLC-4:
16,740 ng/g

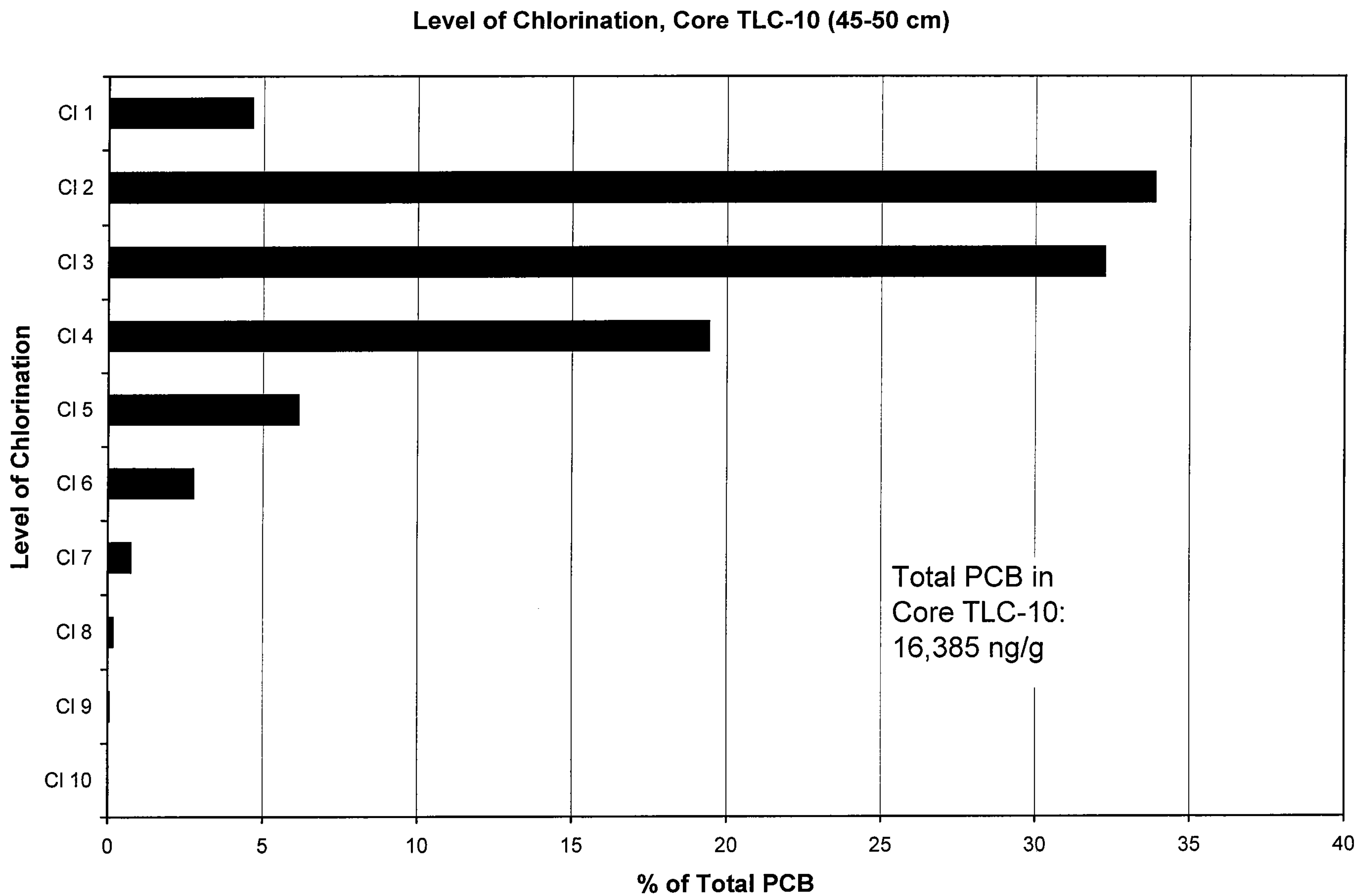

Level of Chlorination, Core TLC-5 (20-25 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core TLC-5:
39,278 ng/g


Level of Chlorination, Core TLC-6 (25-30 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core TLC-6:
33,256 ng/g

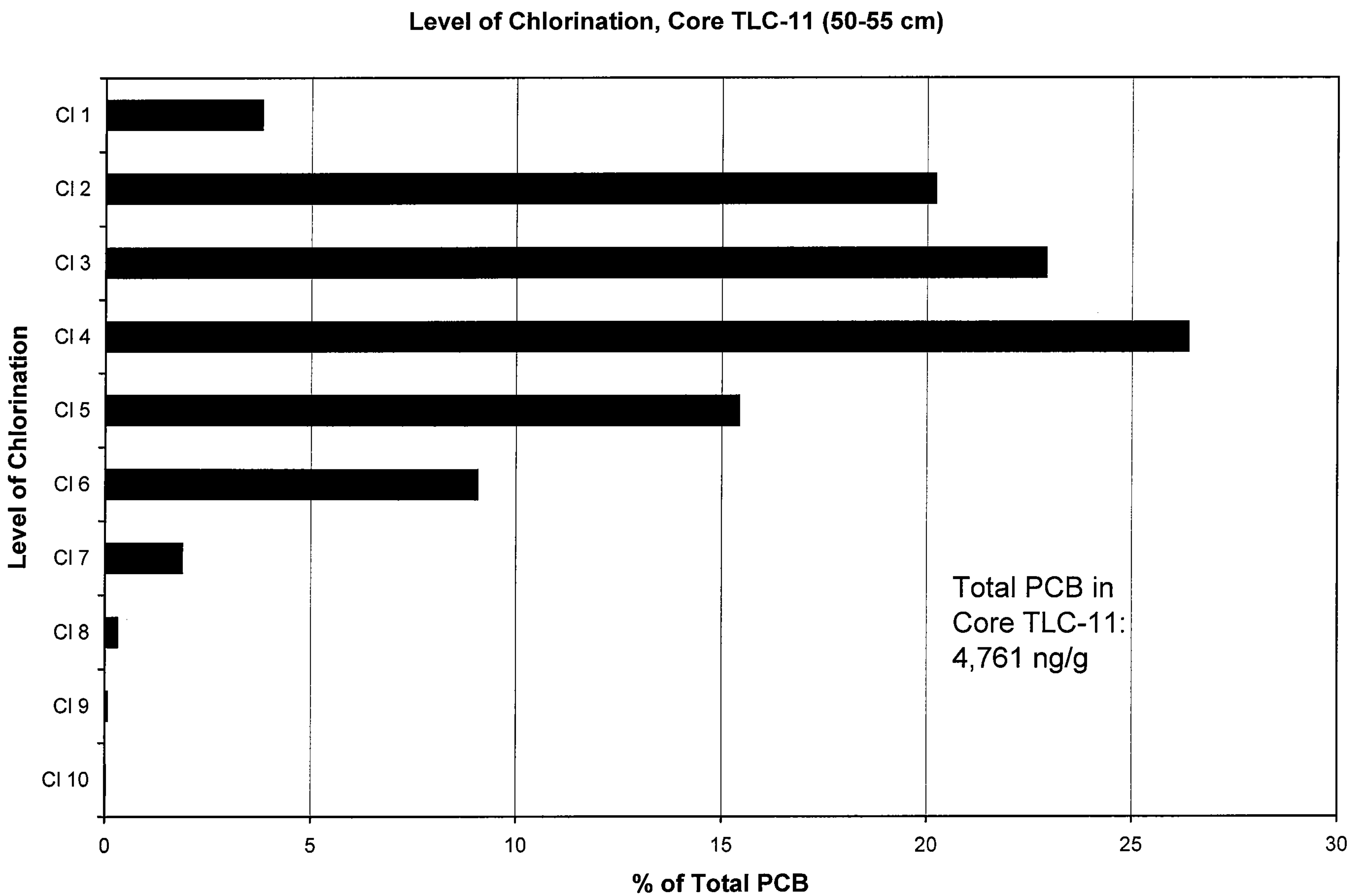

Level of Chlorination, Core TLC-7 (30-35 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core TLC-7:
66,367 ng/g

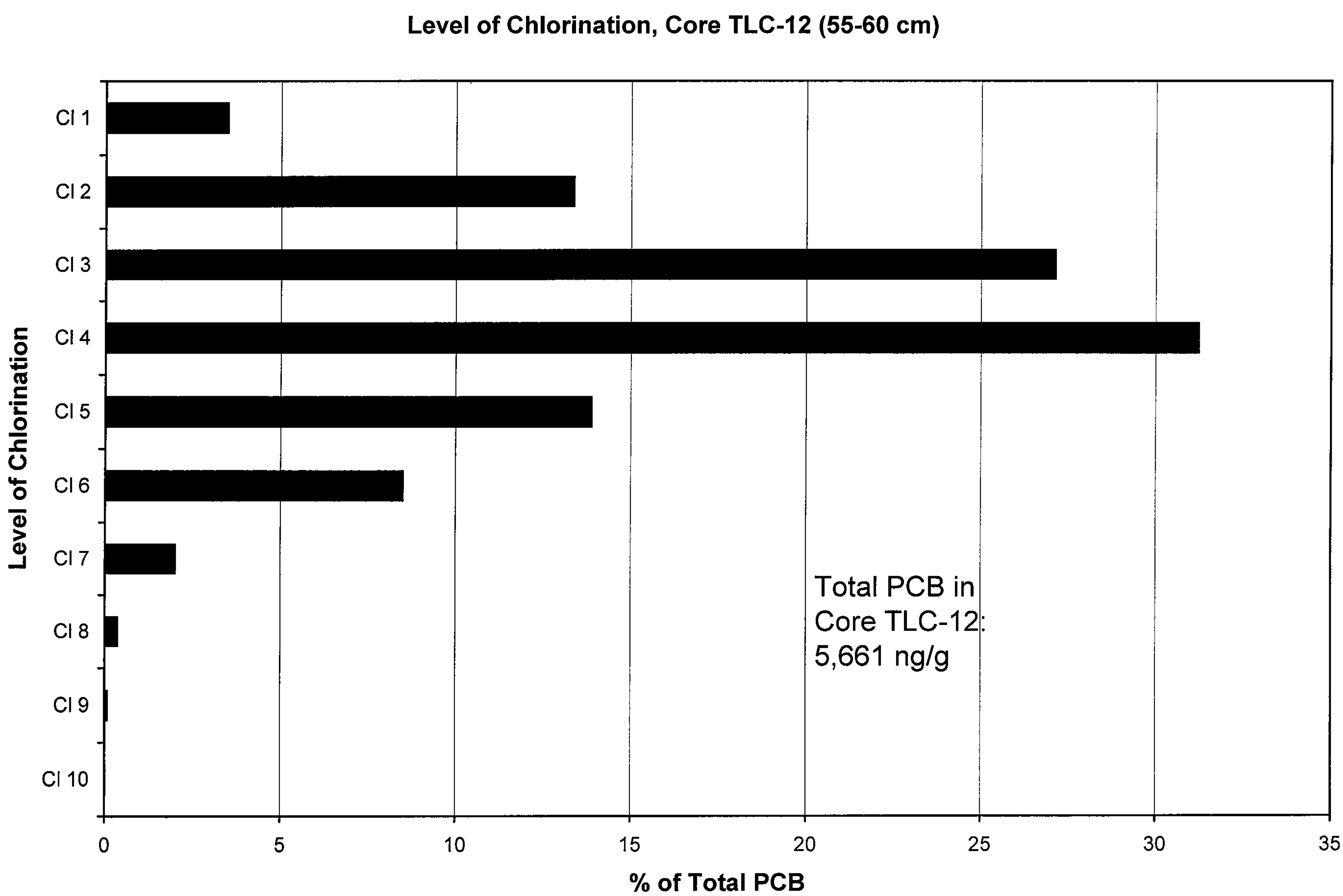

Level of Chlorination, Core TLC-8 (35-40 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
50
% of Total PCB
Total PCB in
Core TLC-8:
59,197 ng/g


Level of Chlorination, Core TLC-9 (40-45 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in
Core TLC-9:
21,440 ng/g

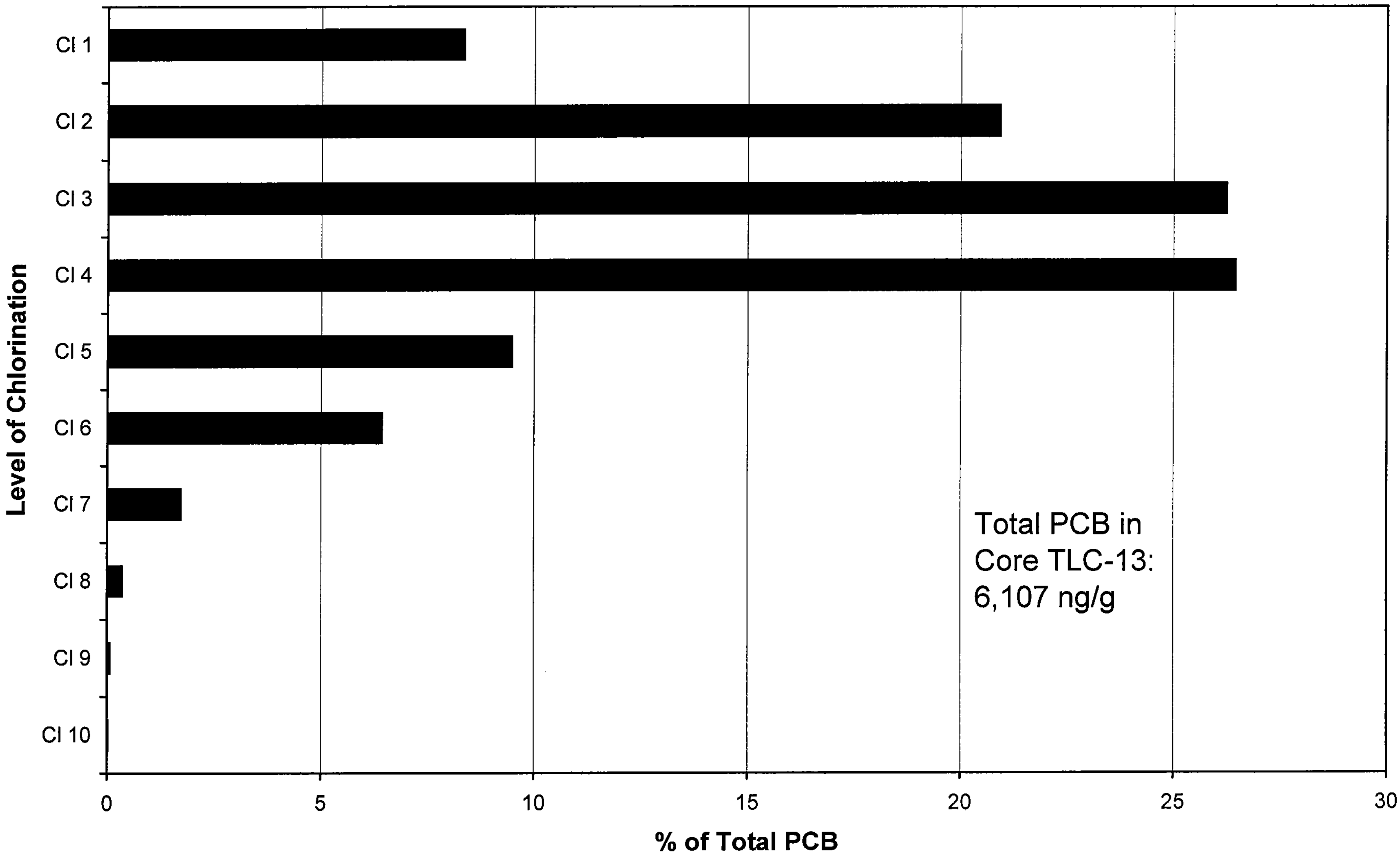


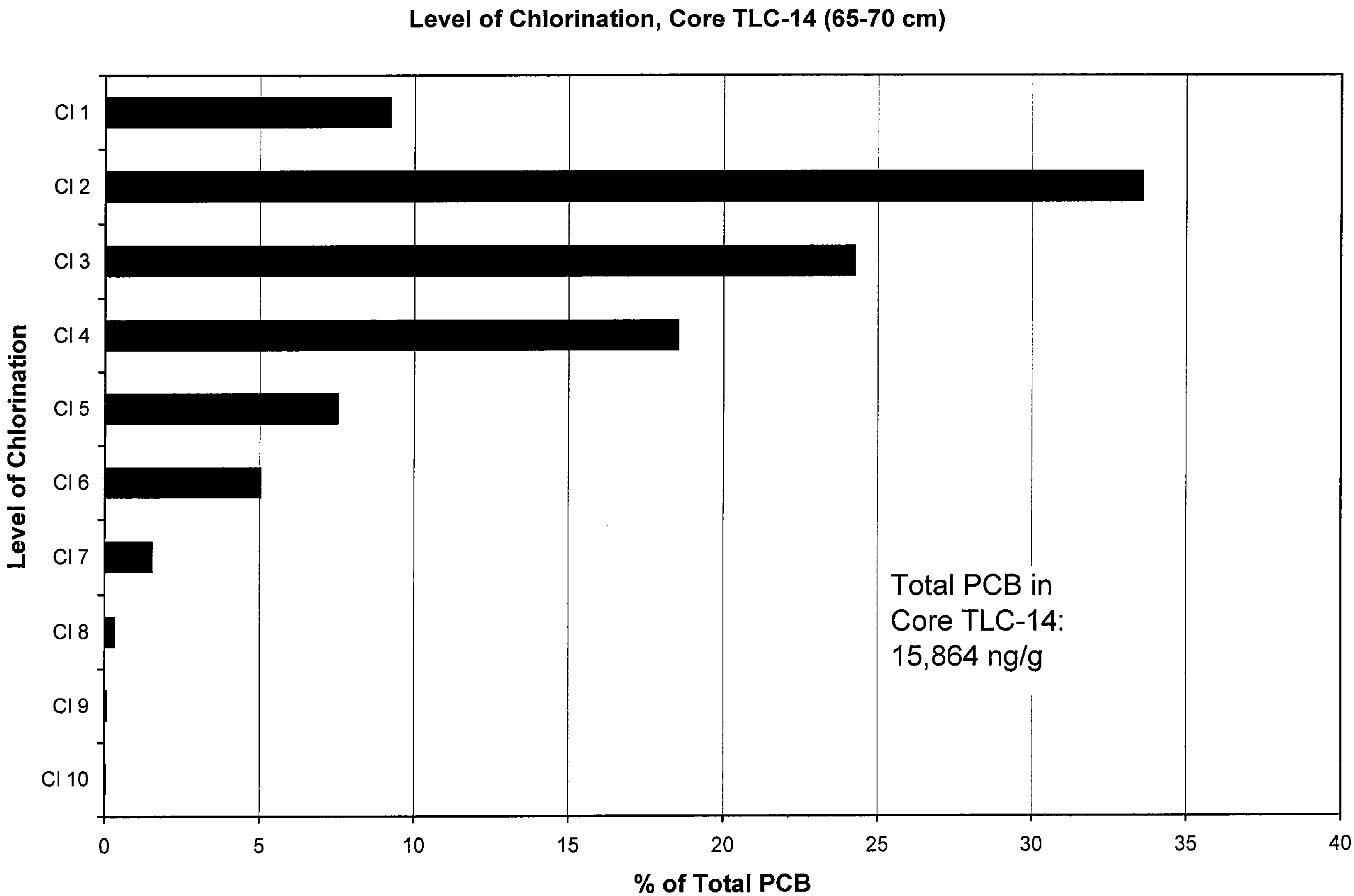
Level of Chlorination, Core TLC-10 (45-50 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in
Core TLC-10:
16,385 ng/g


Level of Chlorination, Core TLC-11 (50-55 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
% of Total PCB
Total PCB in
Core TLC-11:
4,761 ng/g

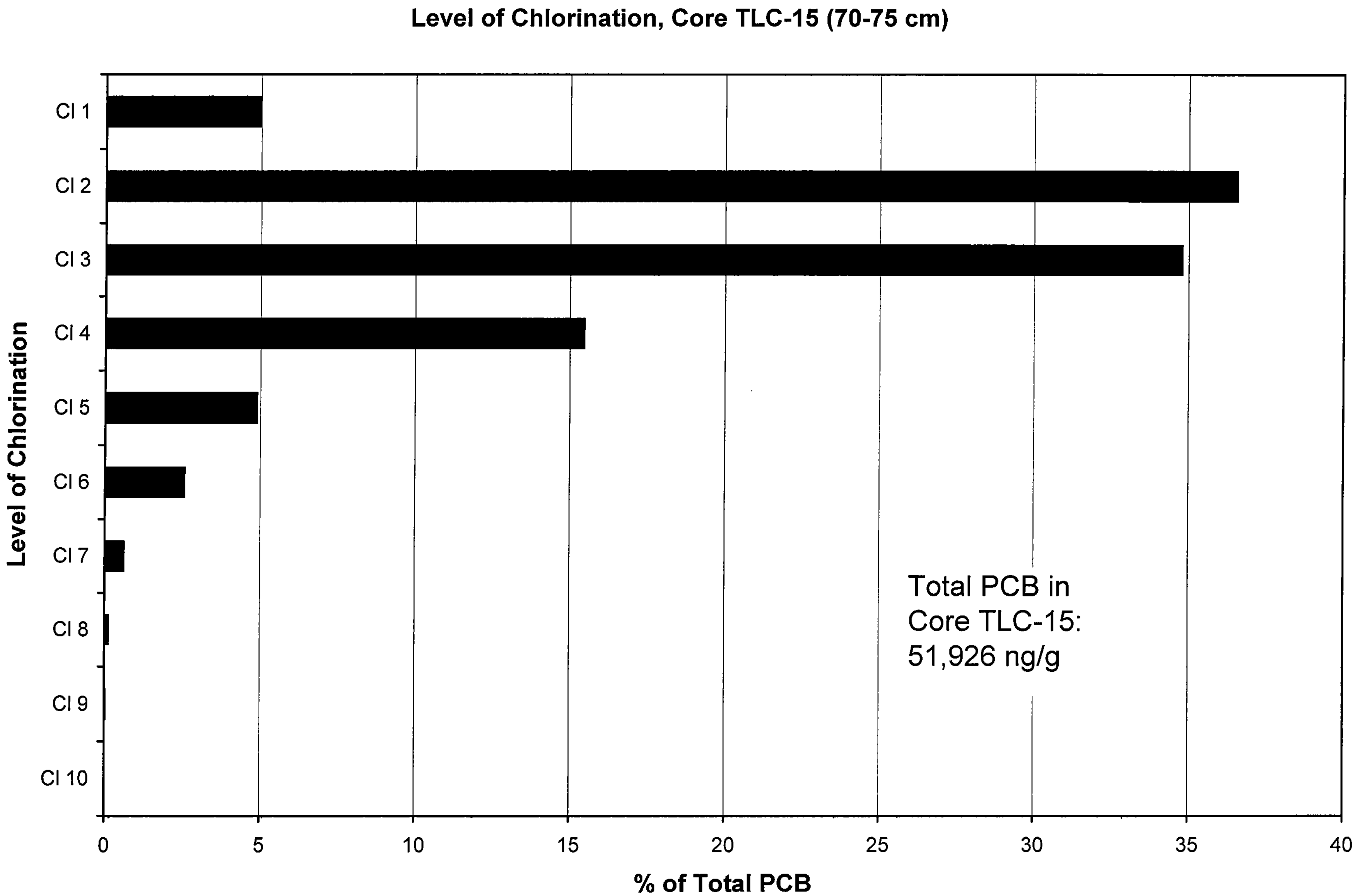

Level of Chlorination, Core TLC-12 (55-60 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TLC-12:
5,661 ng/g

Level of Chlorination, Core TLC-13 (60-65 cm)

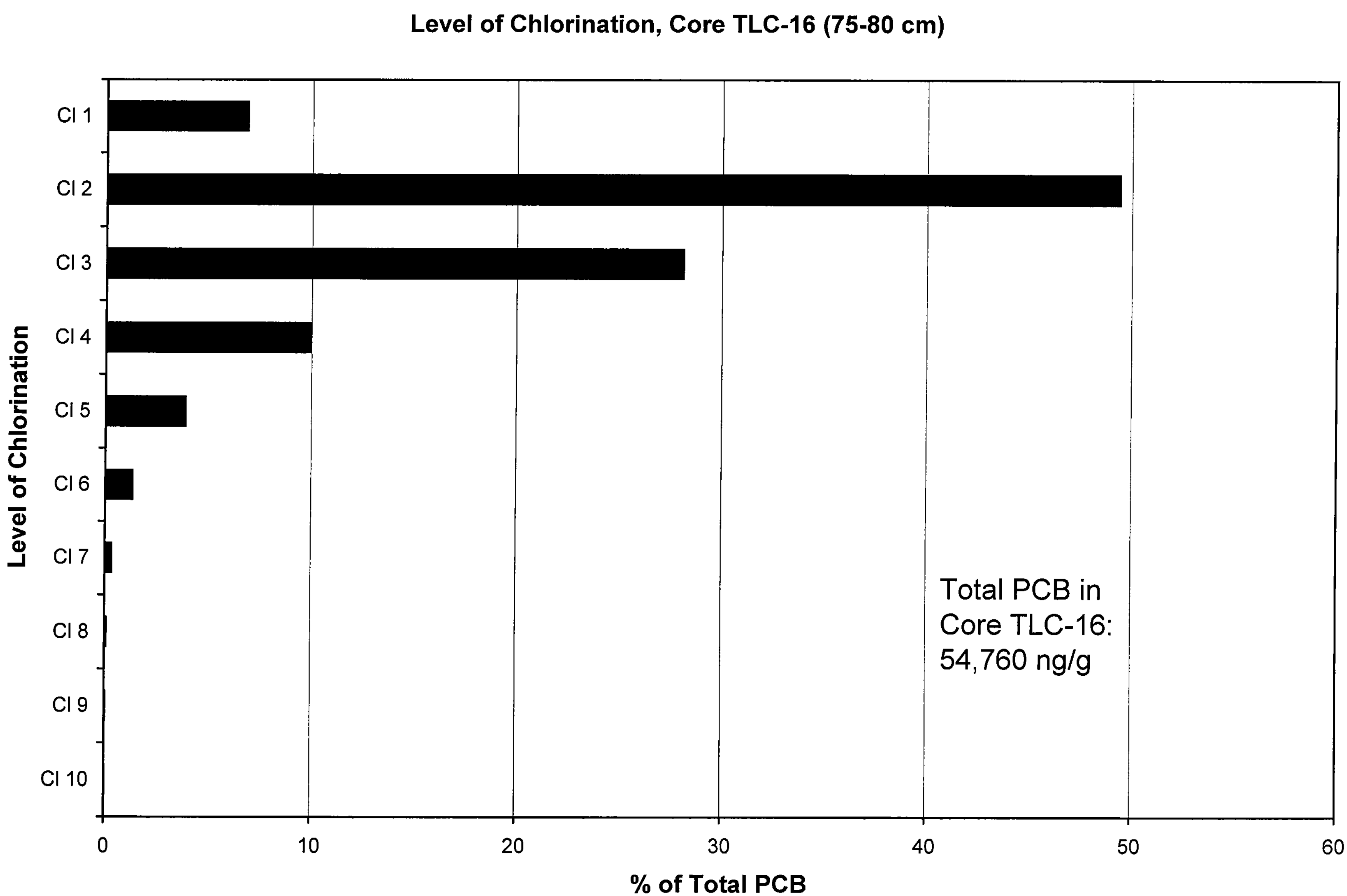




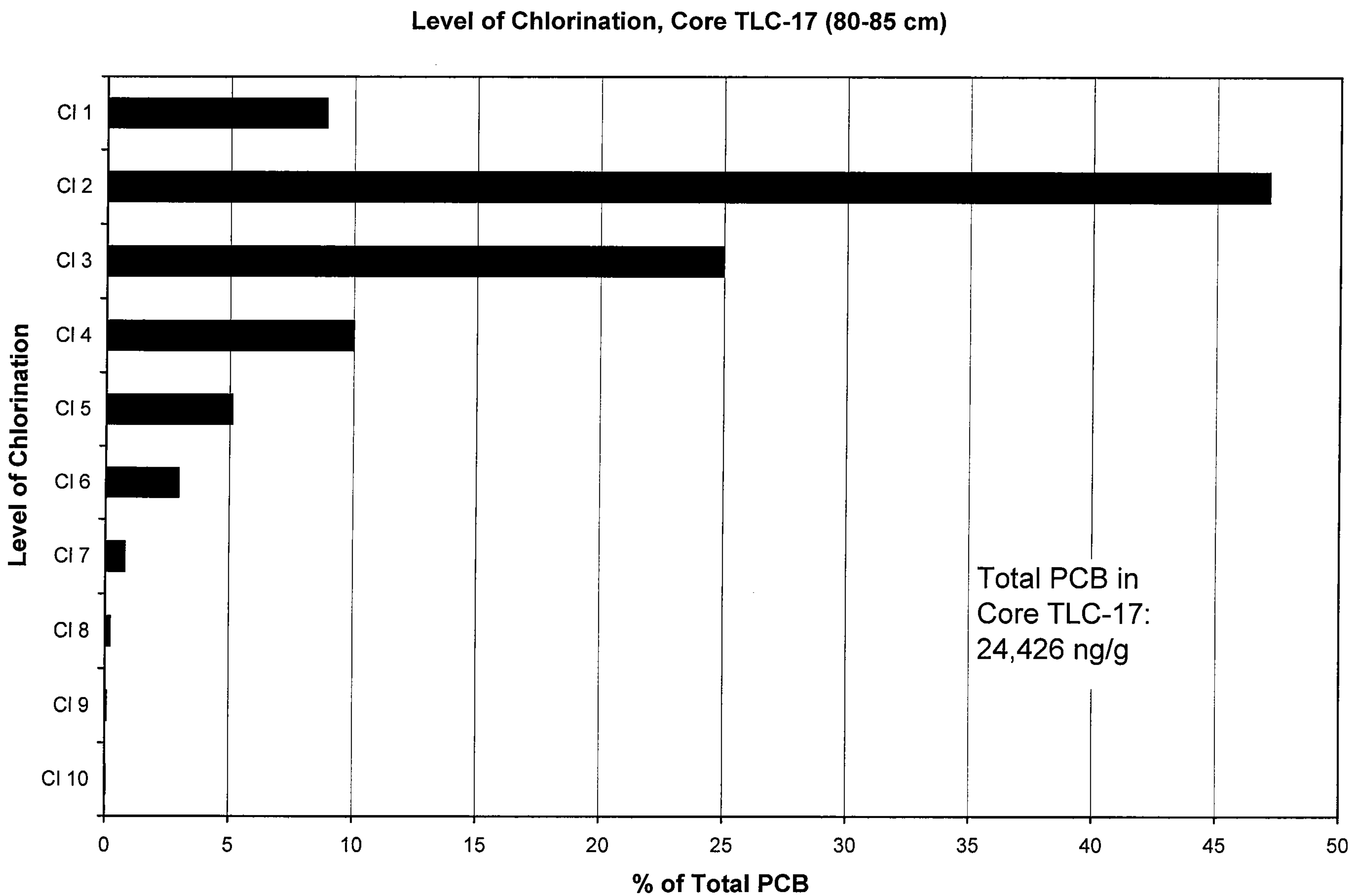
Level of Chlorination, Core TLC-14 (65-70 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in
Core TLC-14:
15,864 ng/g

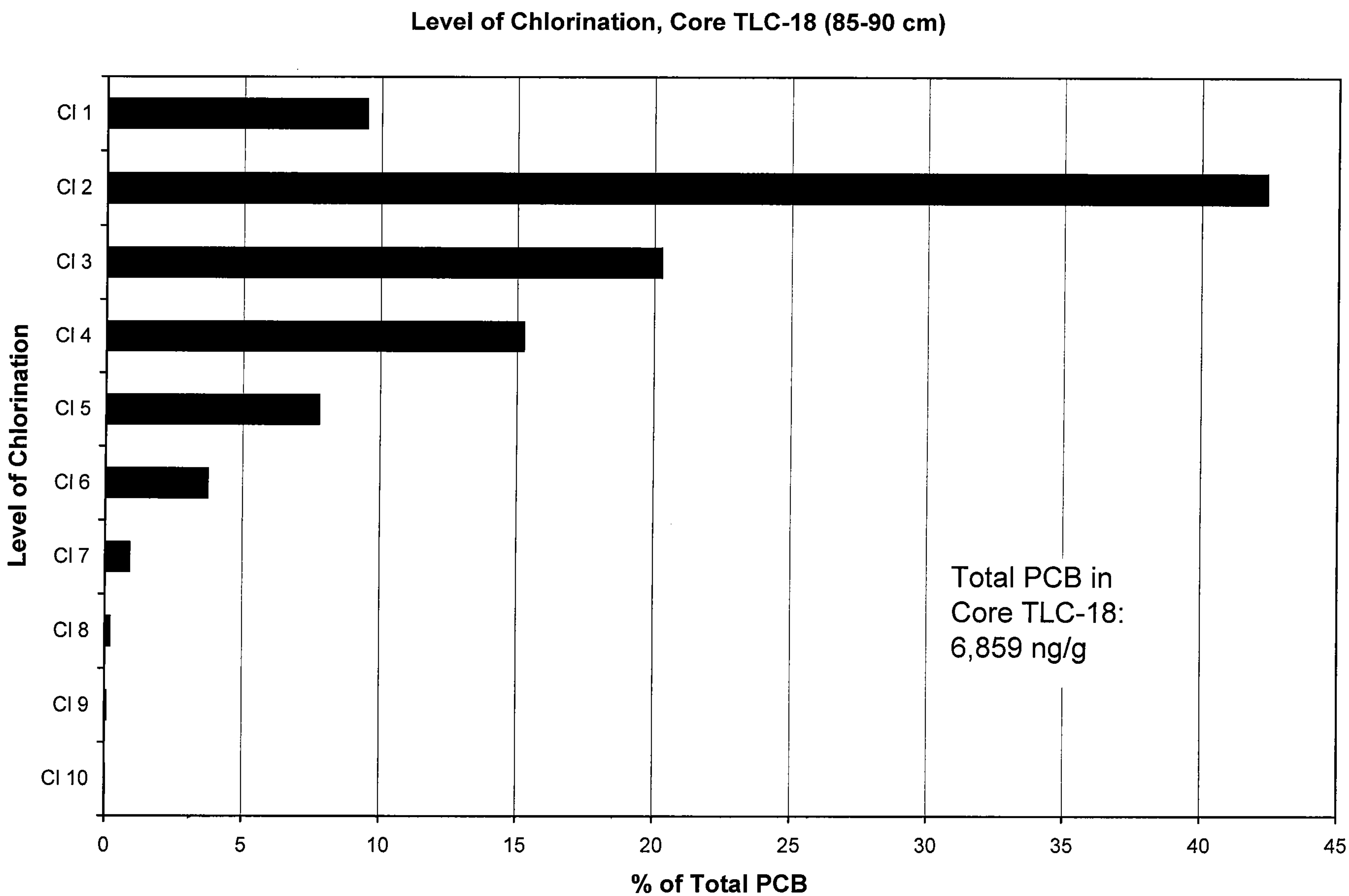


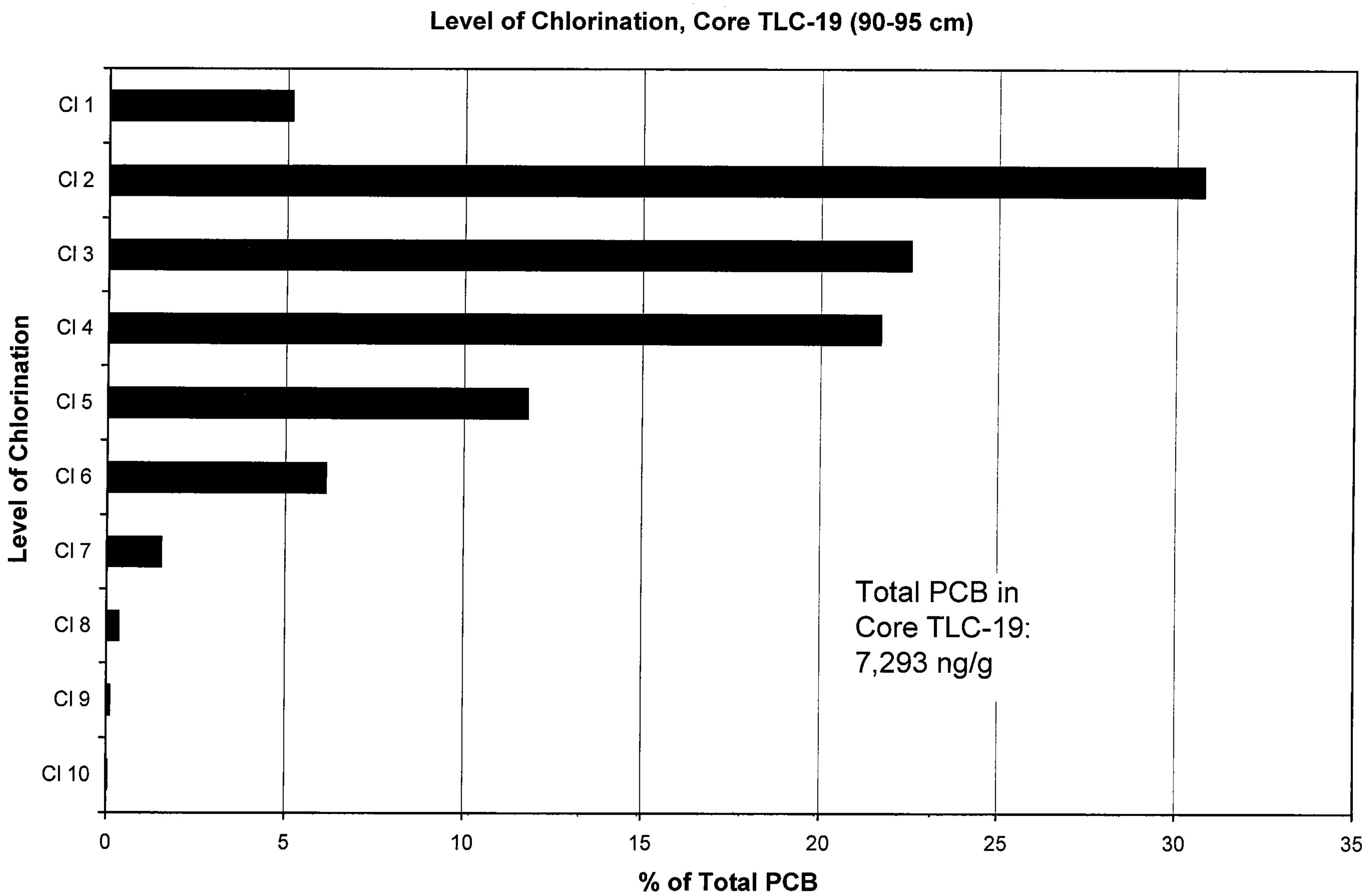
Level of Chlorination, Core TLC-15 (70-75 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
% of Total PCB
Total PCB in
Core TLC-15:
51,926 ng/g



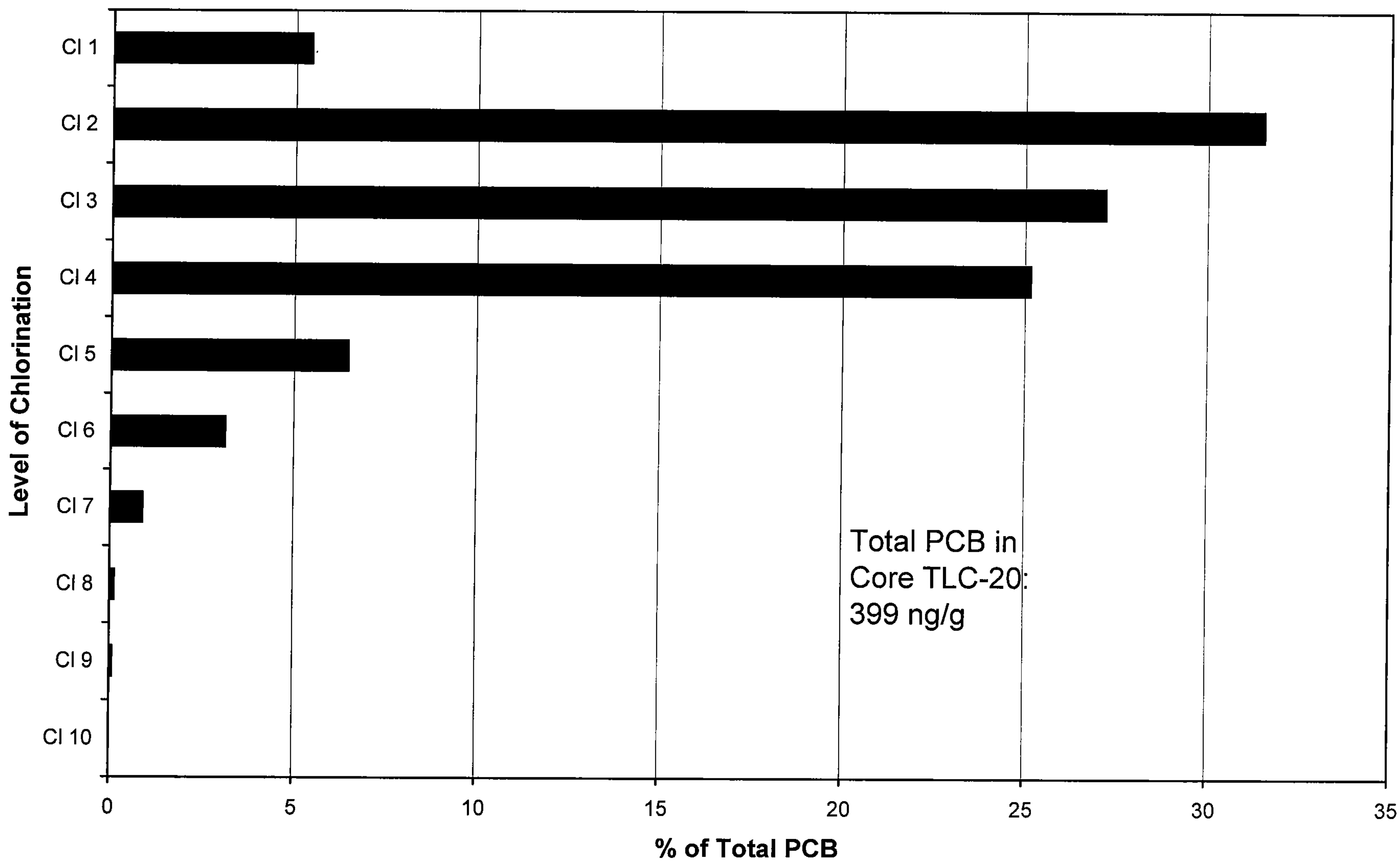
Level of Chlorination, Core TLC-16 (75-80 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
% of Total PCB
Total PCB in
Core TLC-16:
54,760 ng/g

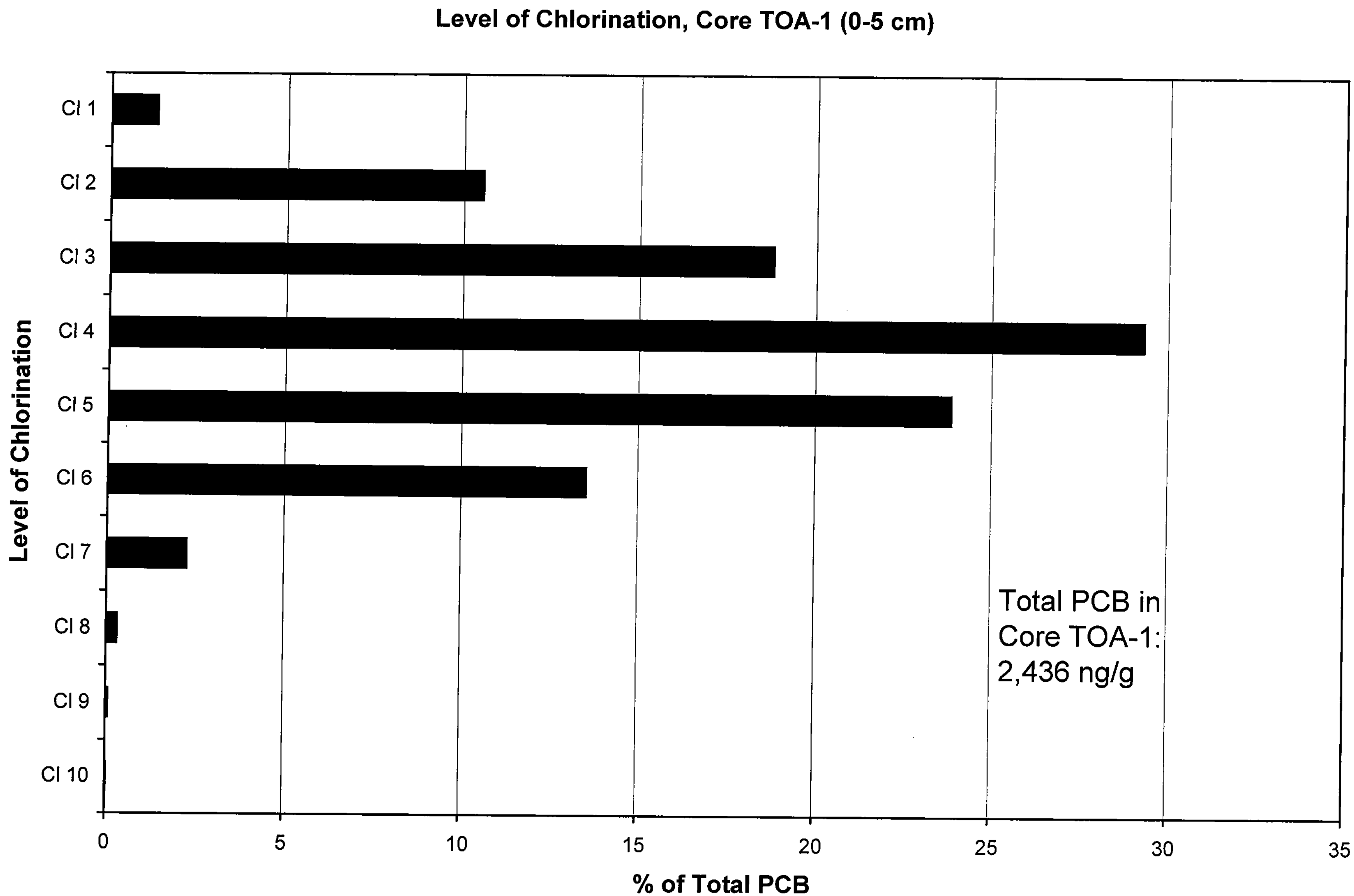

Level of Chlorination, Core TLC-17 (80-85 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
50
% of Total PCB
Total PCB in
Core TLC-17:
24,426 ng/g

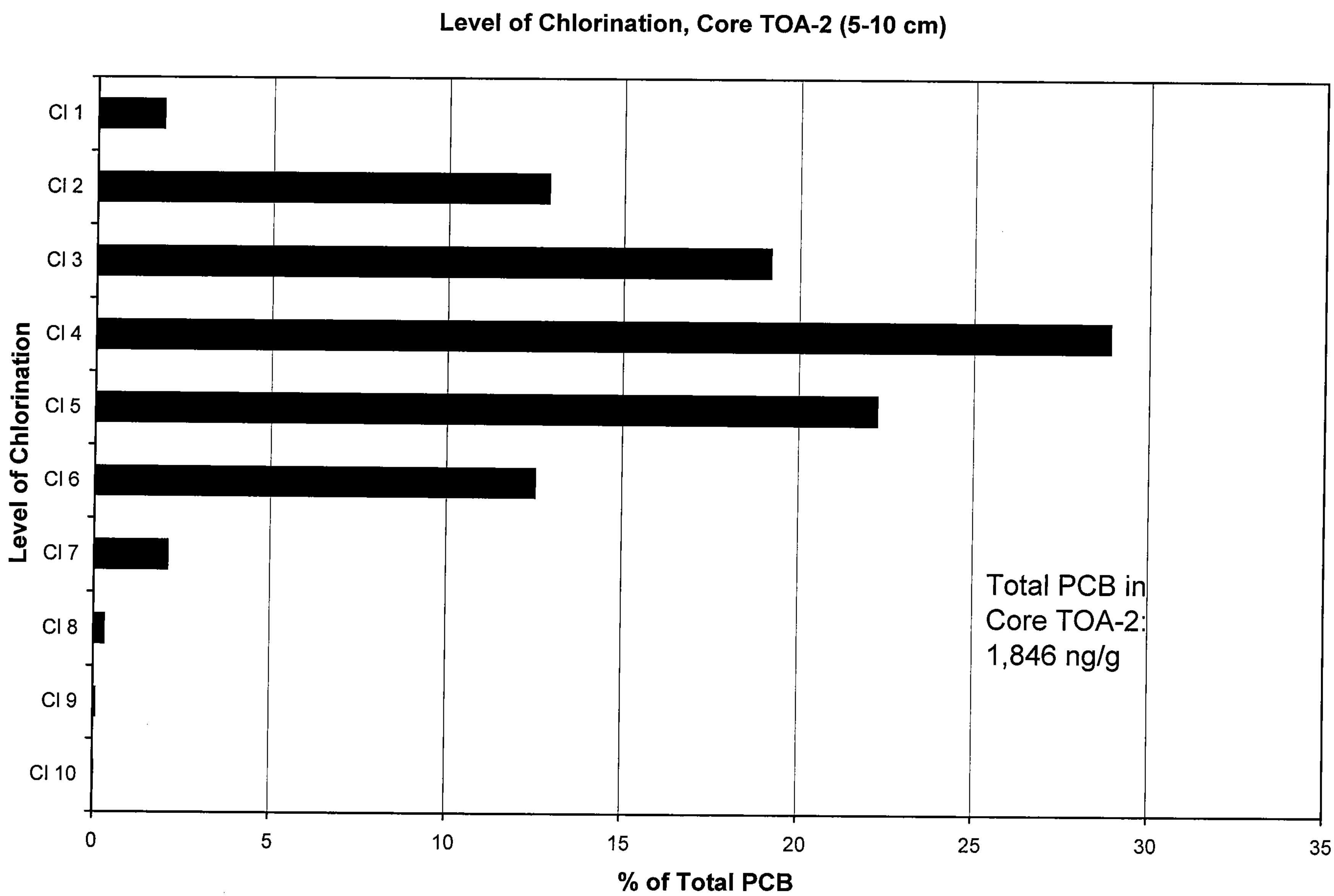

Level of Chlorination, Core TLC-18 (85-90 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core TLC-18:
6,859 ng/g

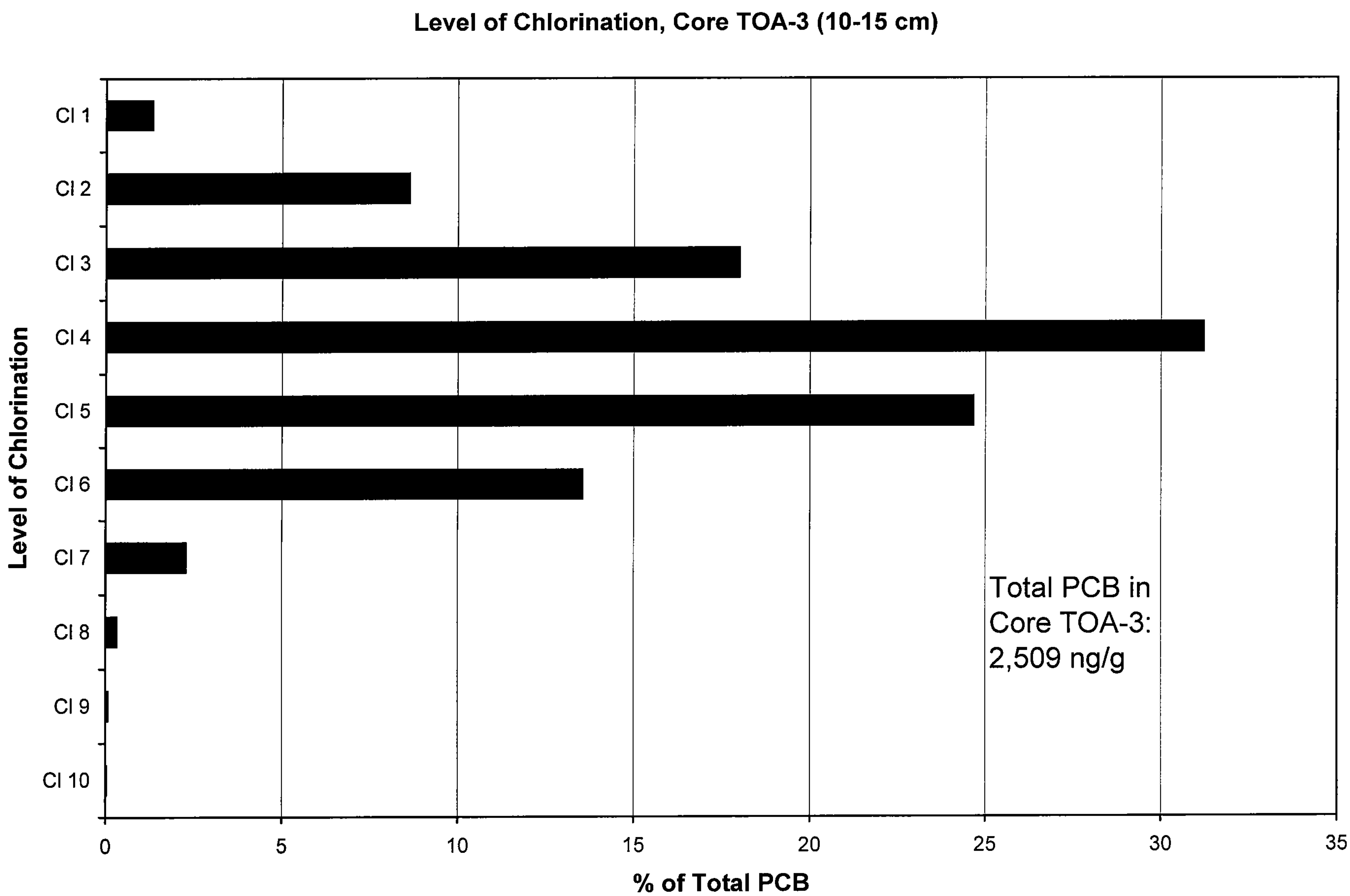

Level of Chlorination, Core TLC-19 (90-95 cm)
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Level of Chlorination
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TLC-19:
7,293 ng/g

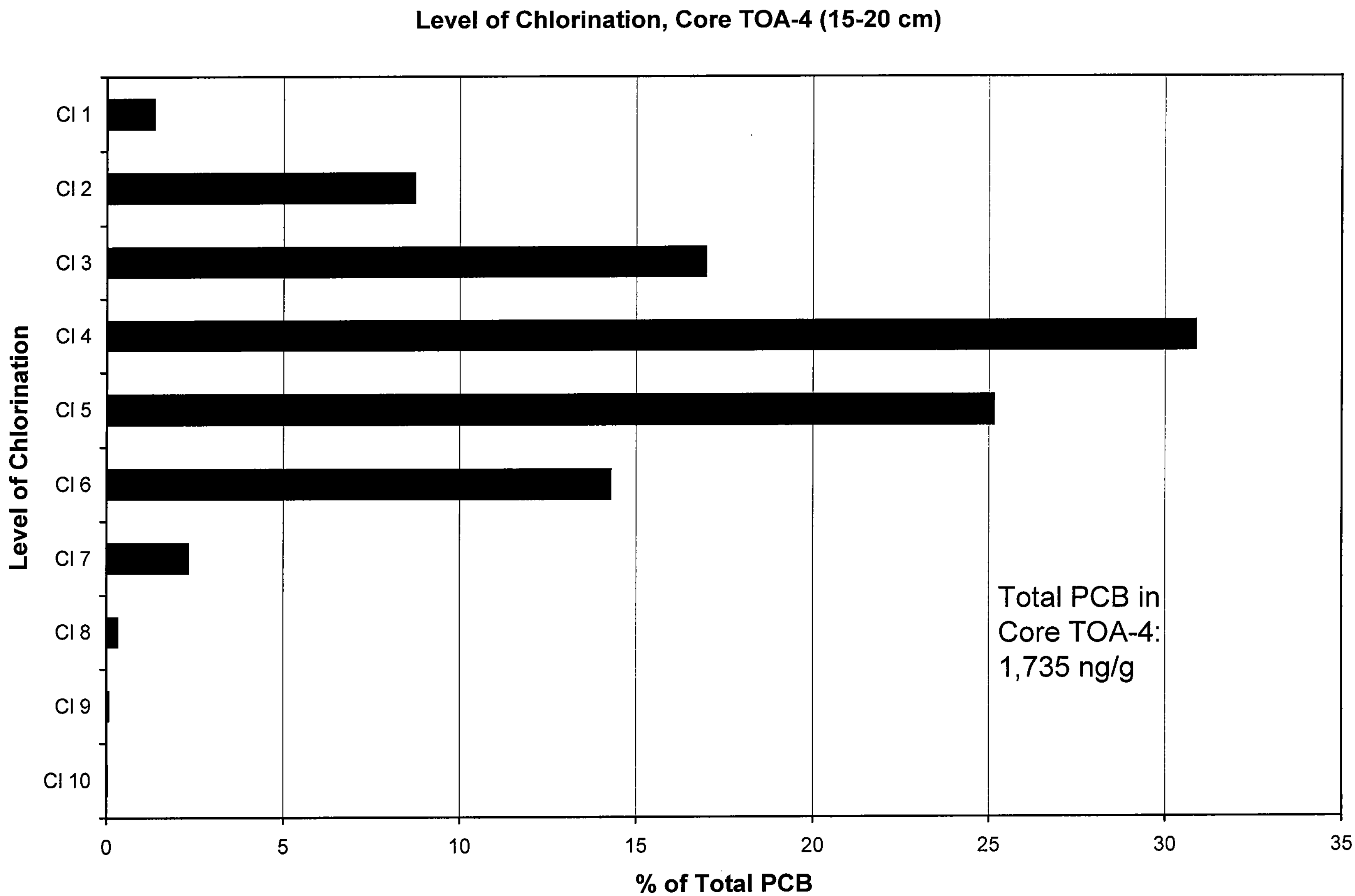
Level of Chlorination, Core TLC-20 (95-100 cm)

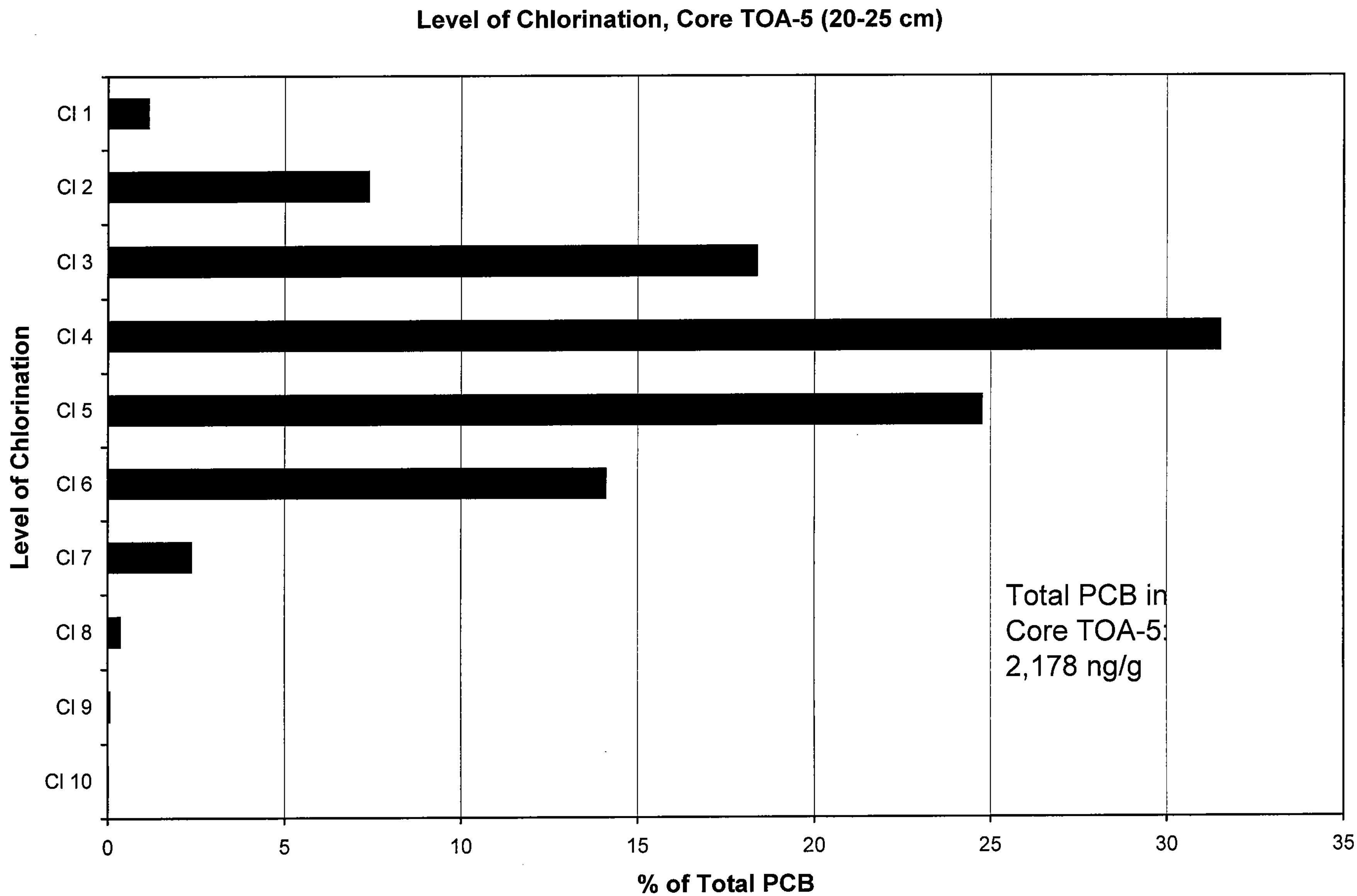


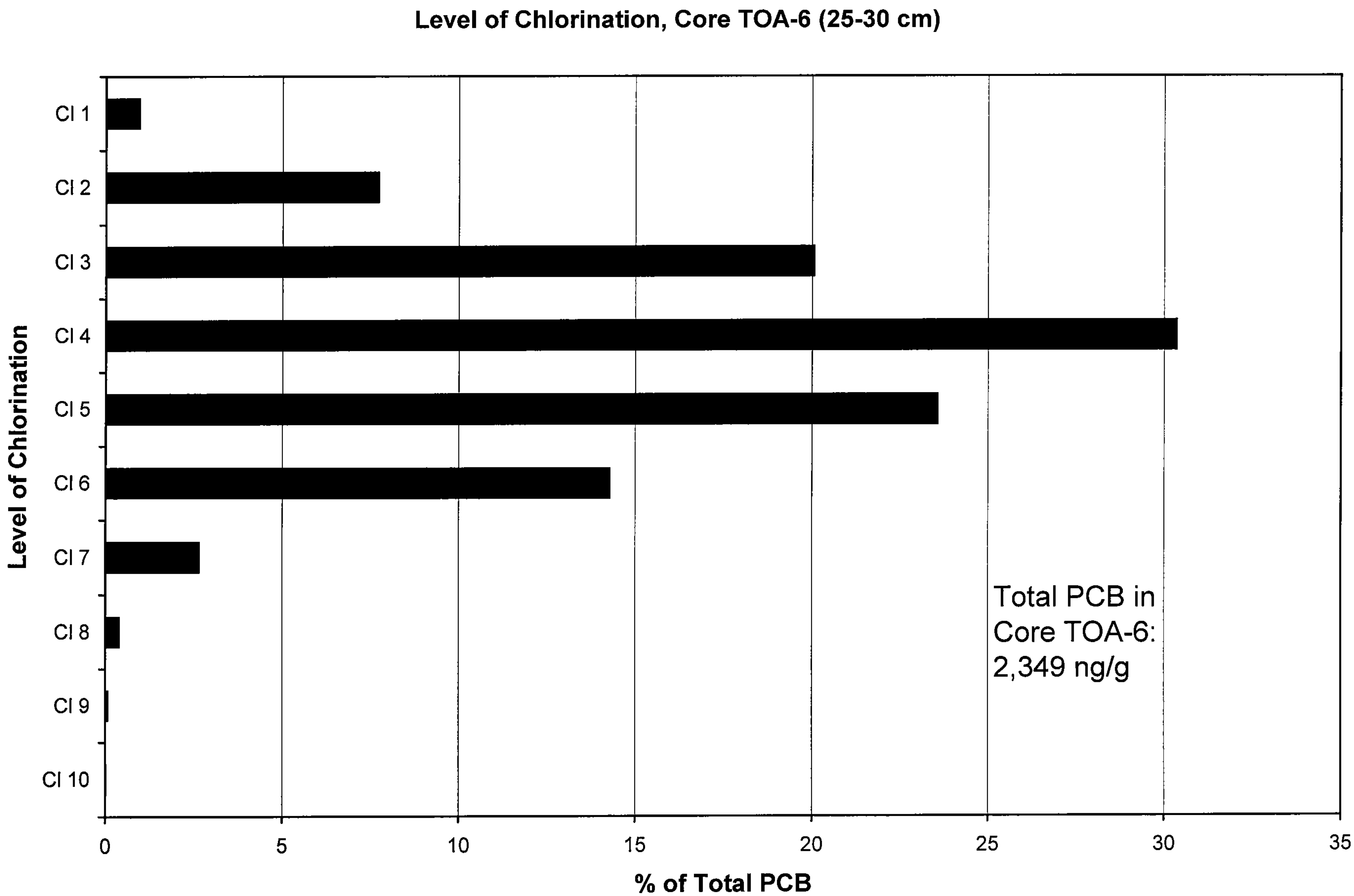

Level of Chlorination, Core TOA-1 (0-5 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in Core TOA-1: 2,436 ng/g


Level of Chlorination, Core TOA-2 (5-10 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOA-2:
1,846 ng/g

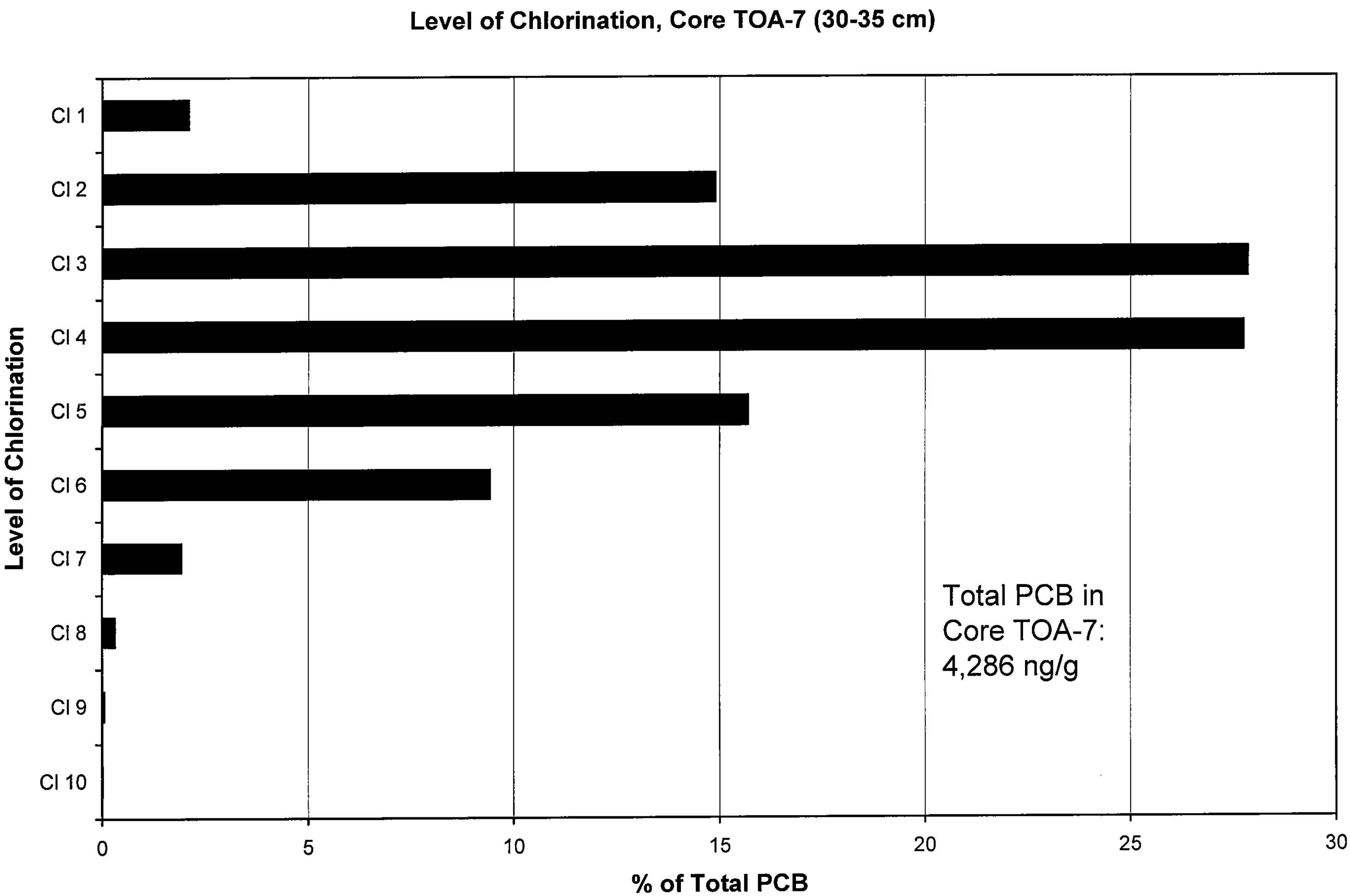

Level of Chlorination, Core TOA-3 (10-15 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOA-3:
2,509 ng/g


Level of Chlorination, Core TOA-4 (15-20 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in Core TOA-4: 1,735 ng/g


Level of Chlorination, Core TOA-5 (20-25 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOA-5:
2,178 ng/g

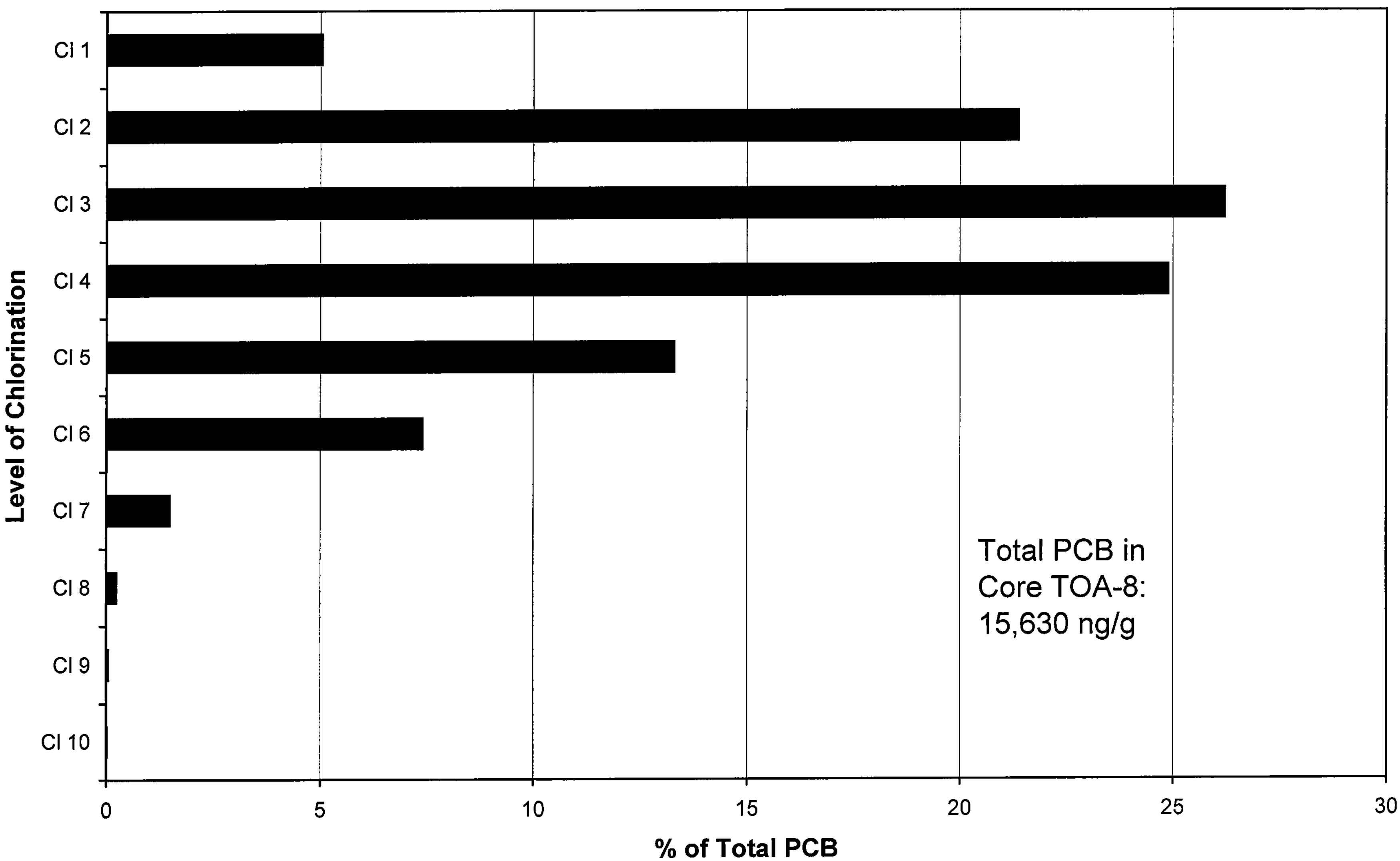


Level of Chlorination, Core TOA-6 (25-30 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOA-6:
2,349 ng/g

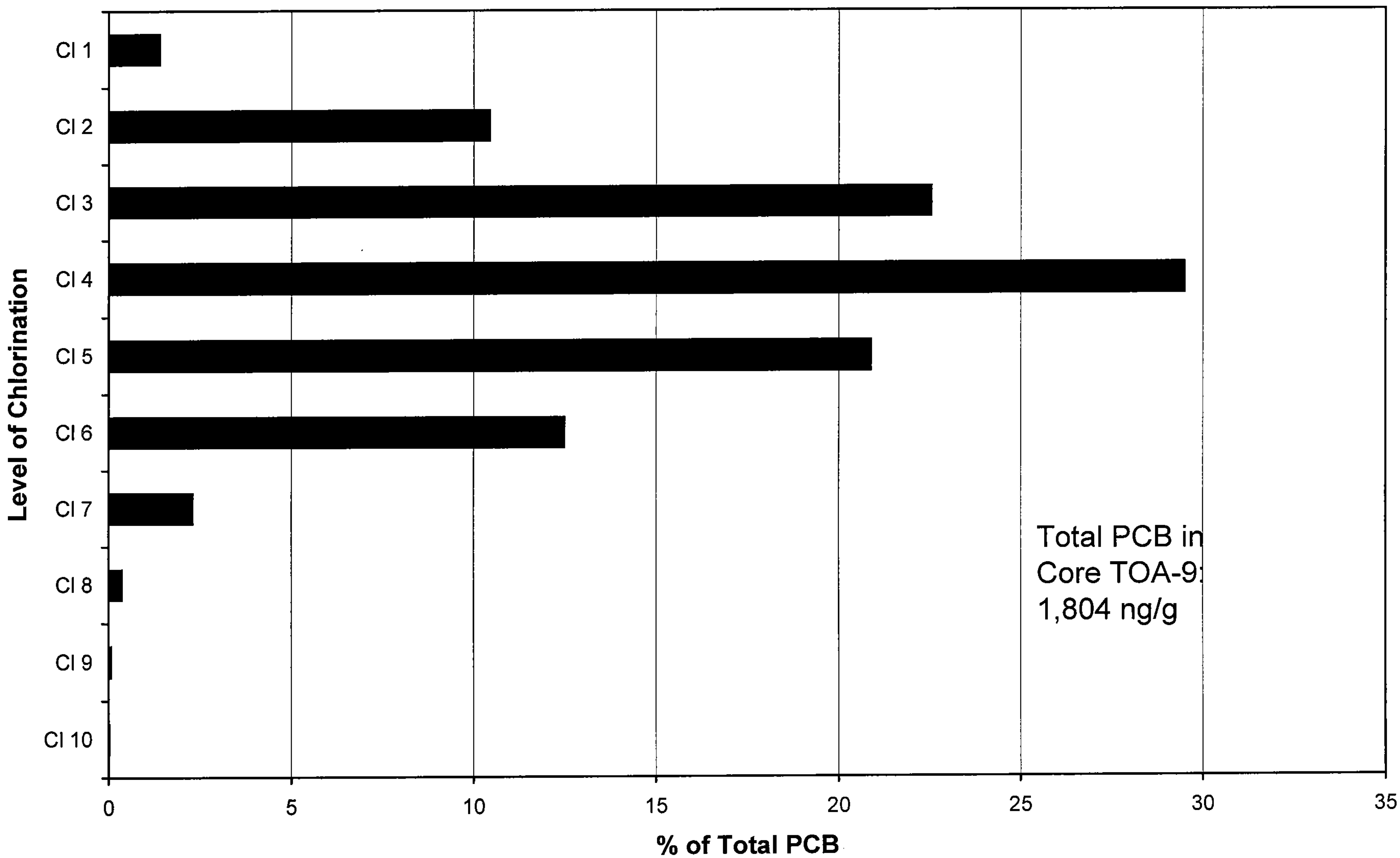


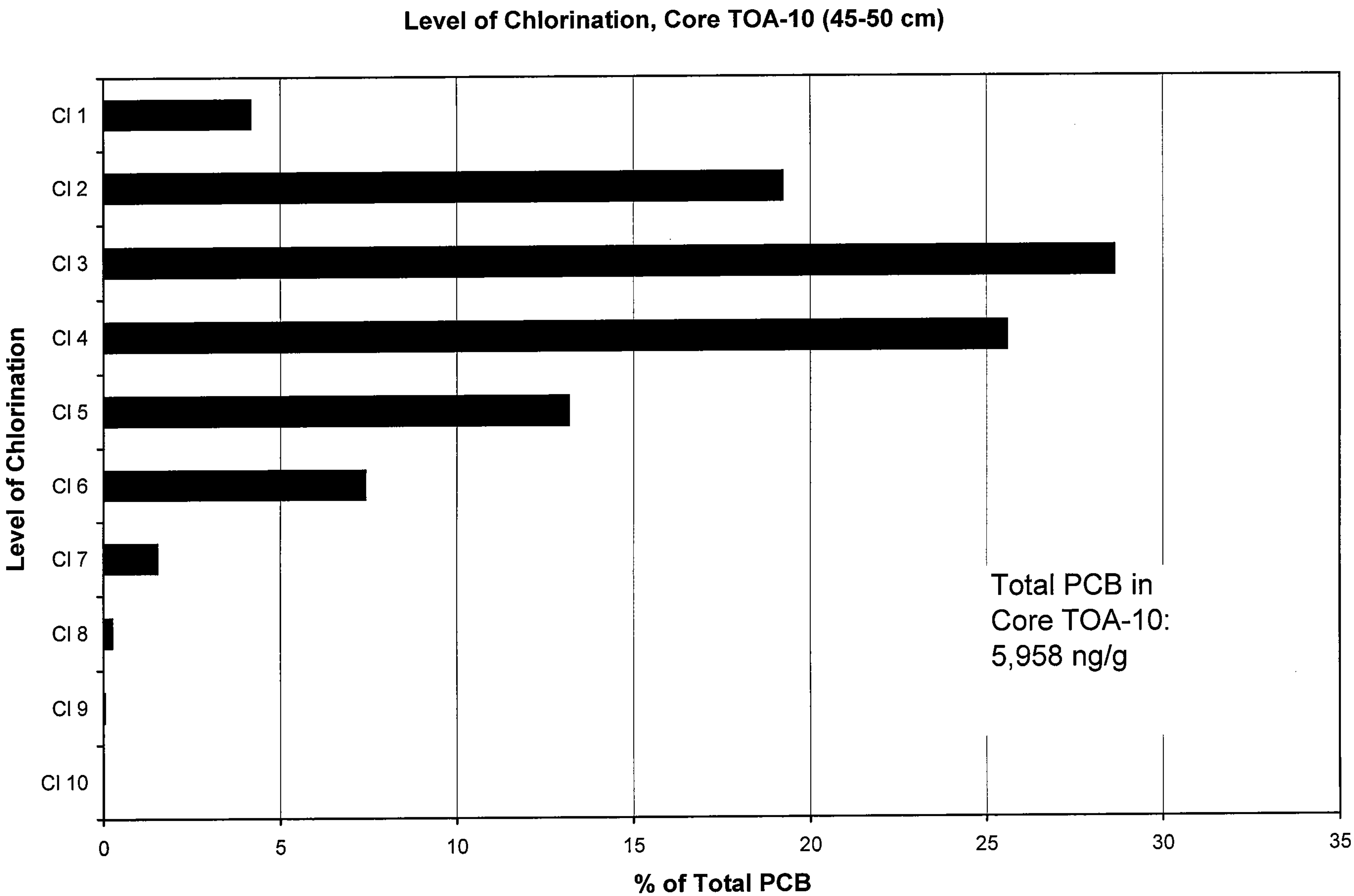
Level of Chlorination, Core TOA-7 (30-35 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
% of Total PCB
Total PCB in Core TOA-7: 4,286 ng/g

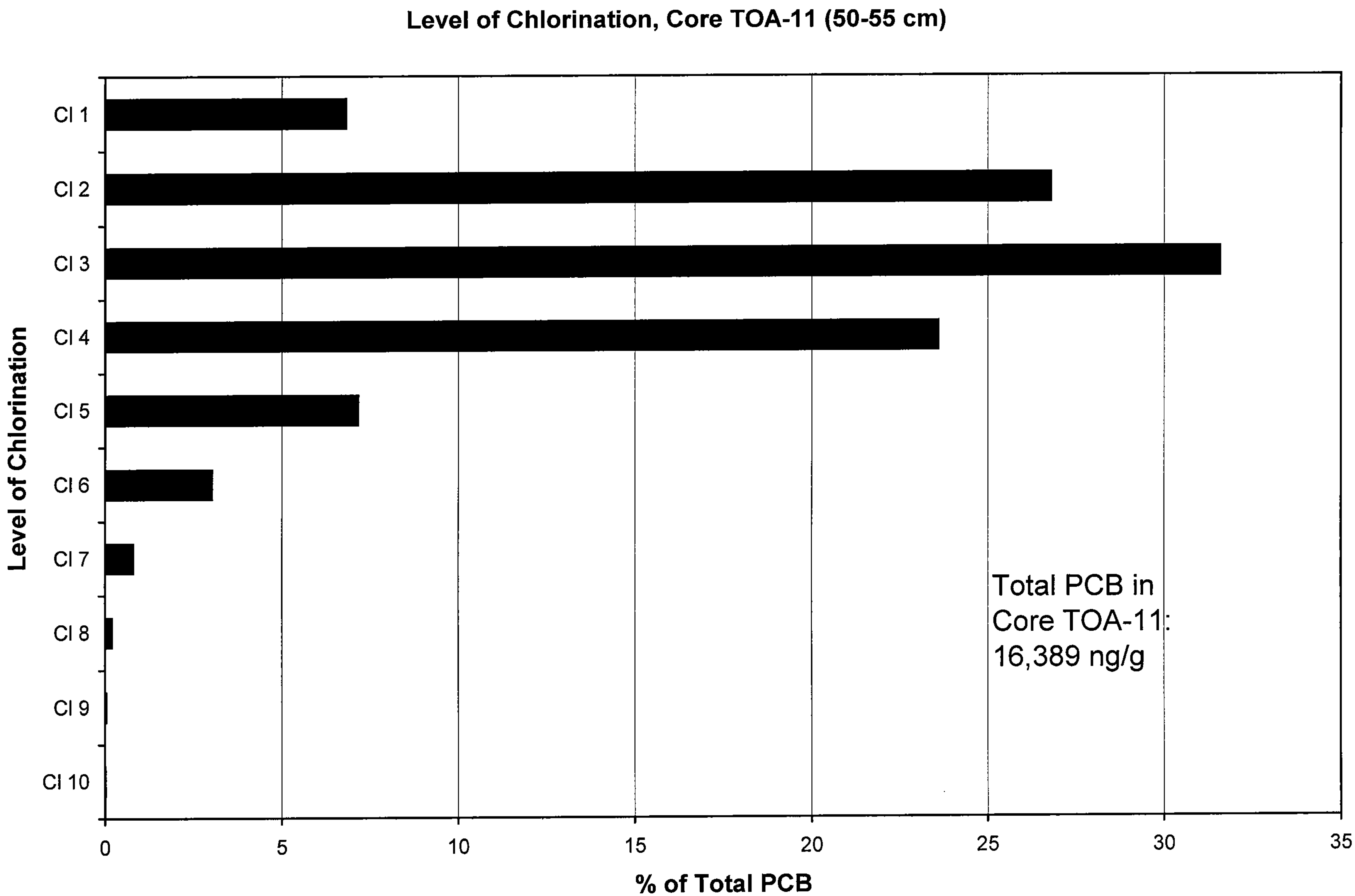
Level of Chlorination, Core TOA-8 (35-40 cm)

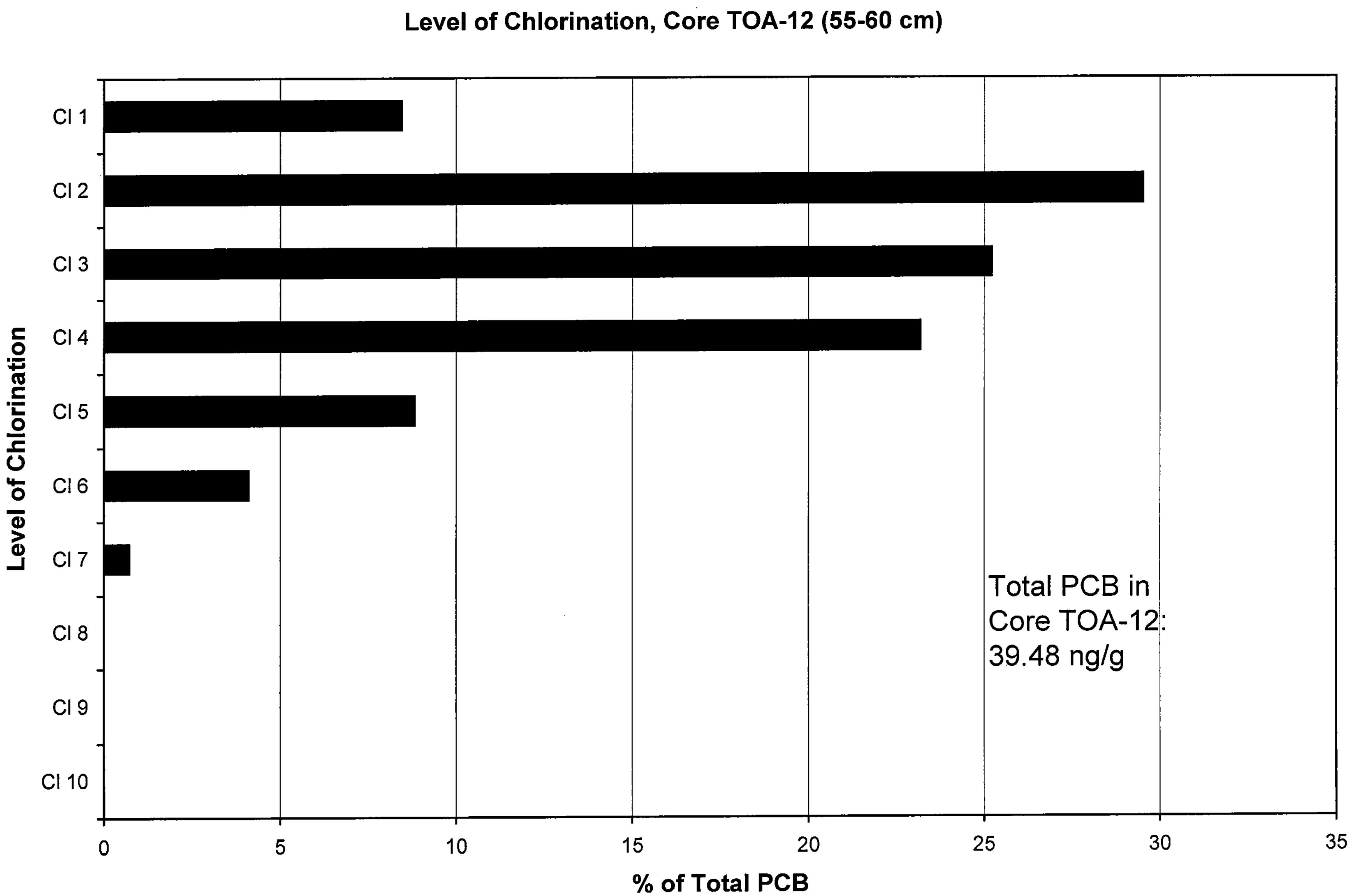


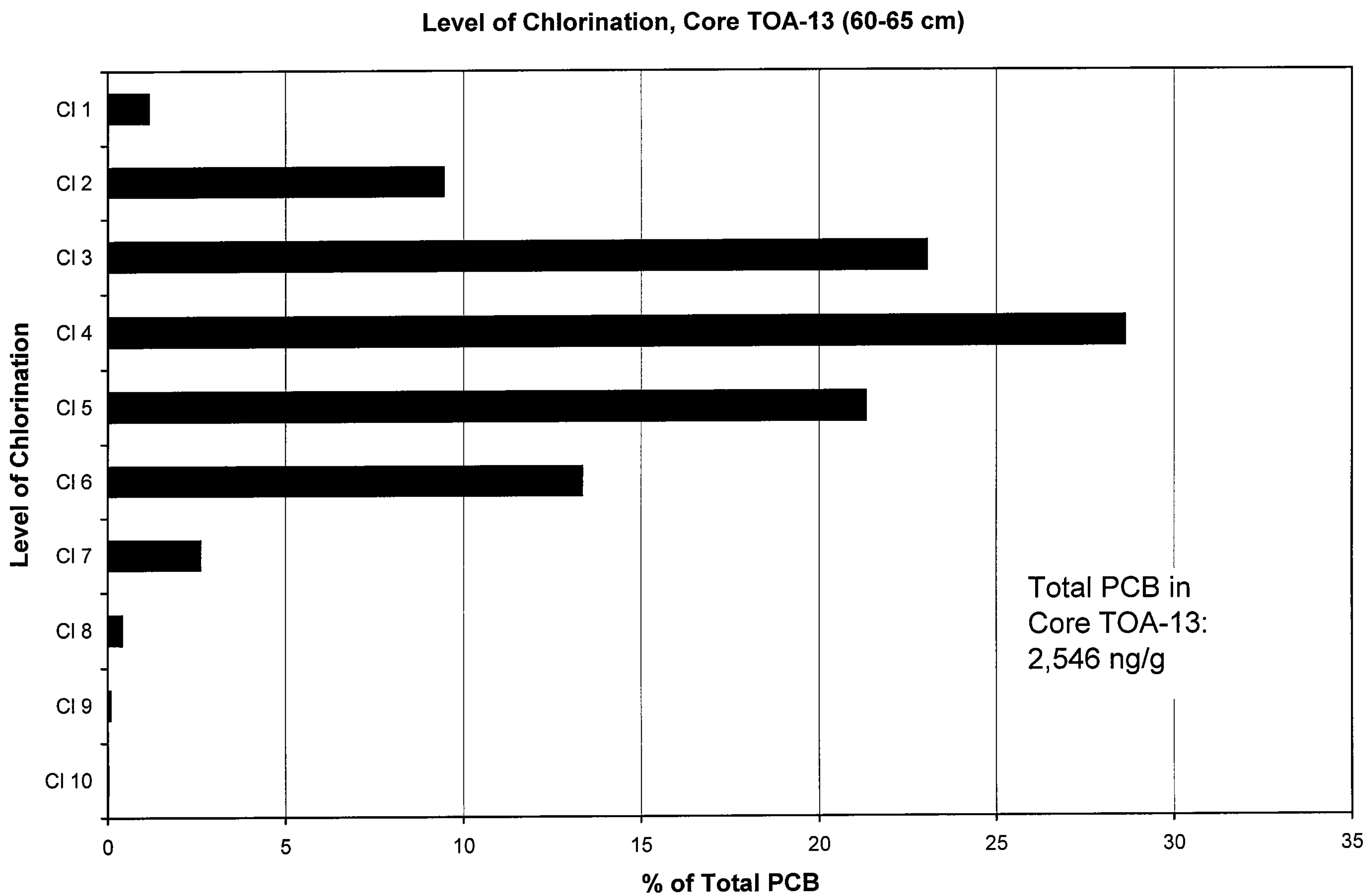
Level of Chlorination, Core TOA-9 (40-45 cm)




Level of Chlorination, Core TOA-10 (45-50 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOA-10:
5,958 ng/g

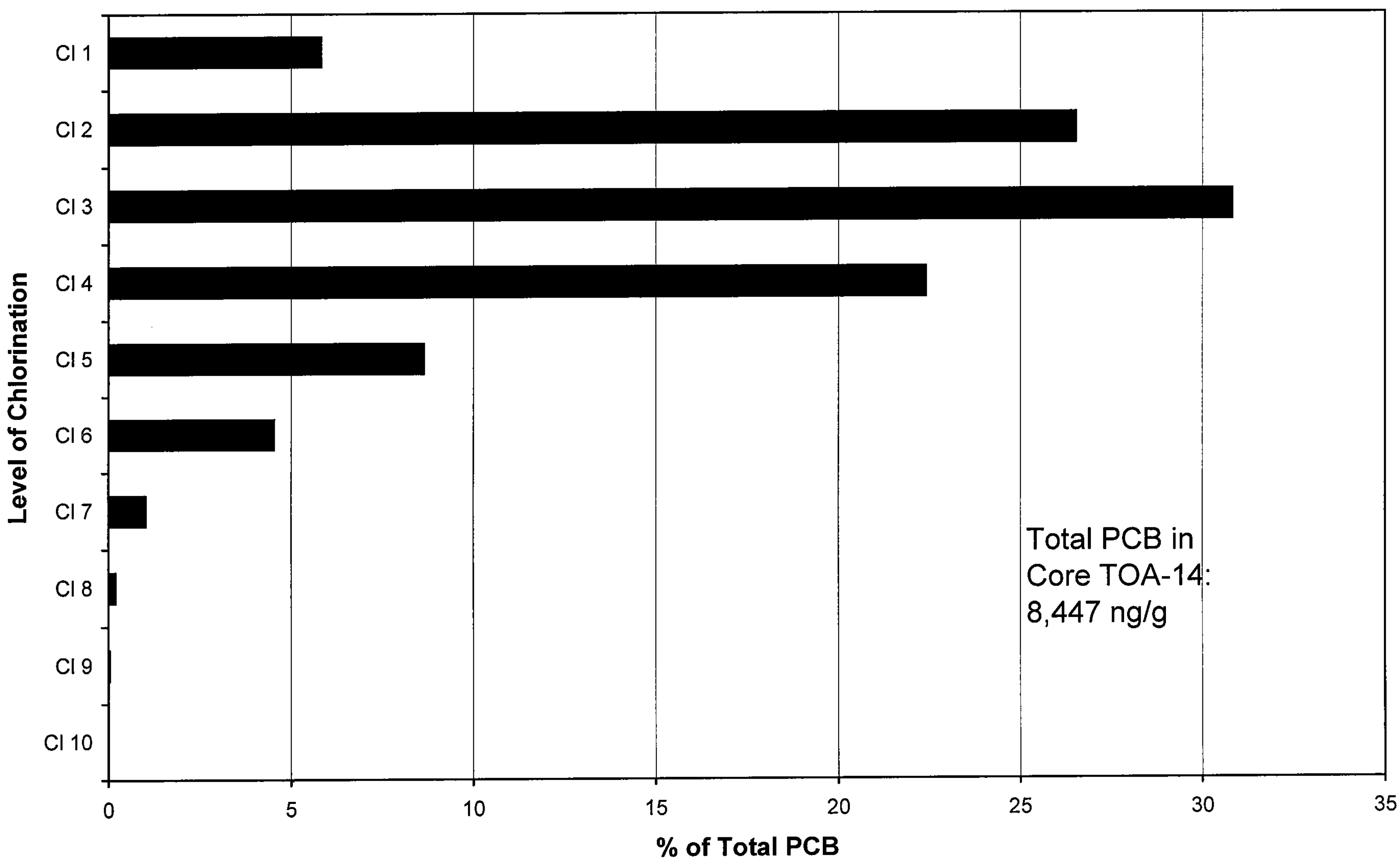

Level of Chlorination, Core TOA-11 (50-55 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOA-11:
16,389 ng/g

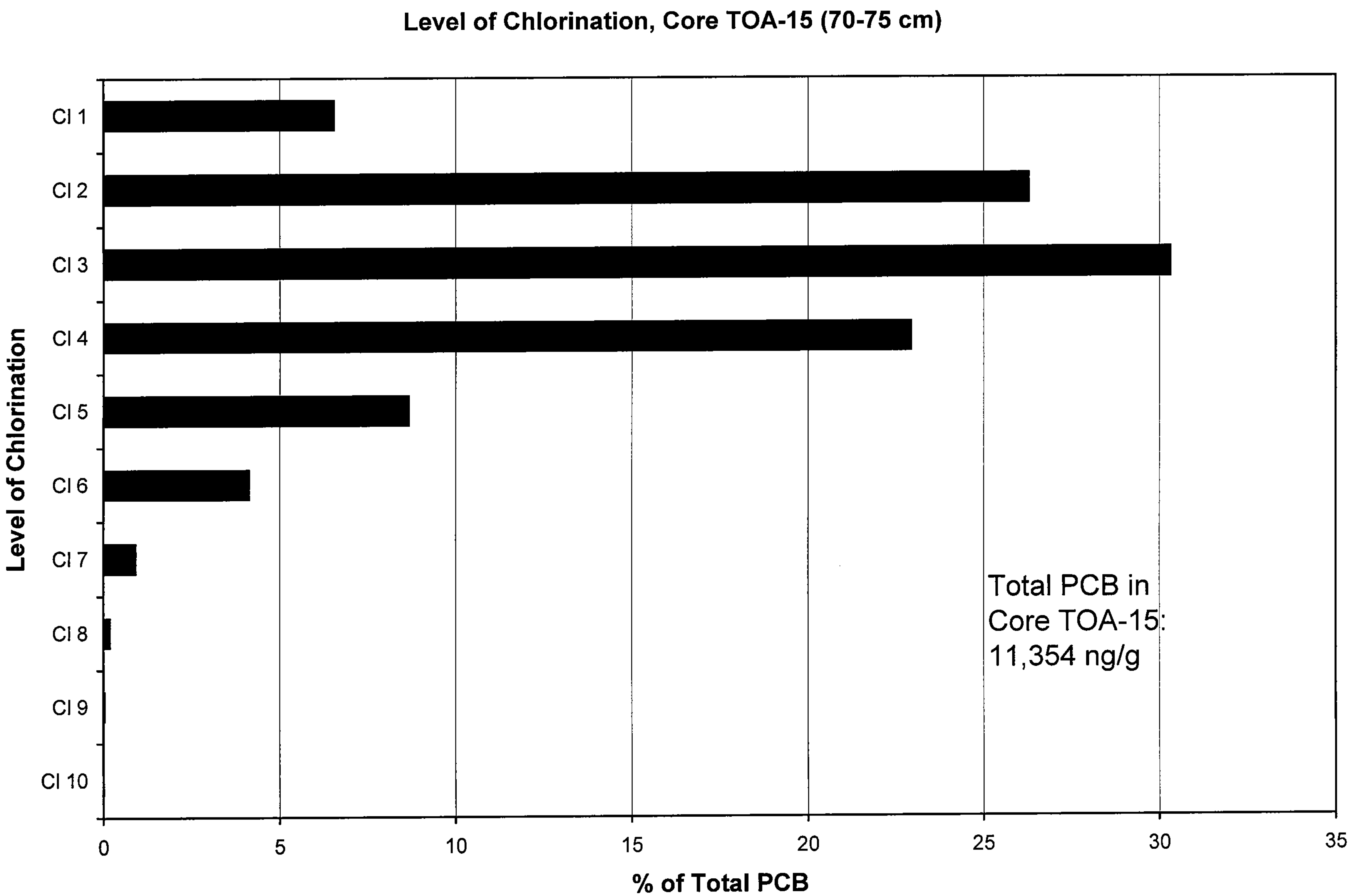

Level of Chlorination, Core TOA-12 (55-60 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOA-12:
39.48 ng/g



Level of Chlorination, Core TOA-13 (60-65 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOA-13:
2,546 ng/g

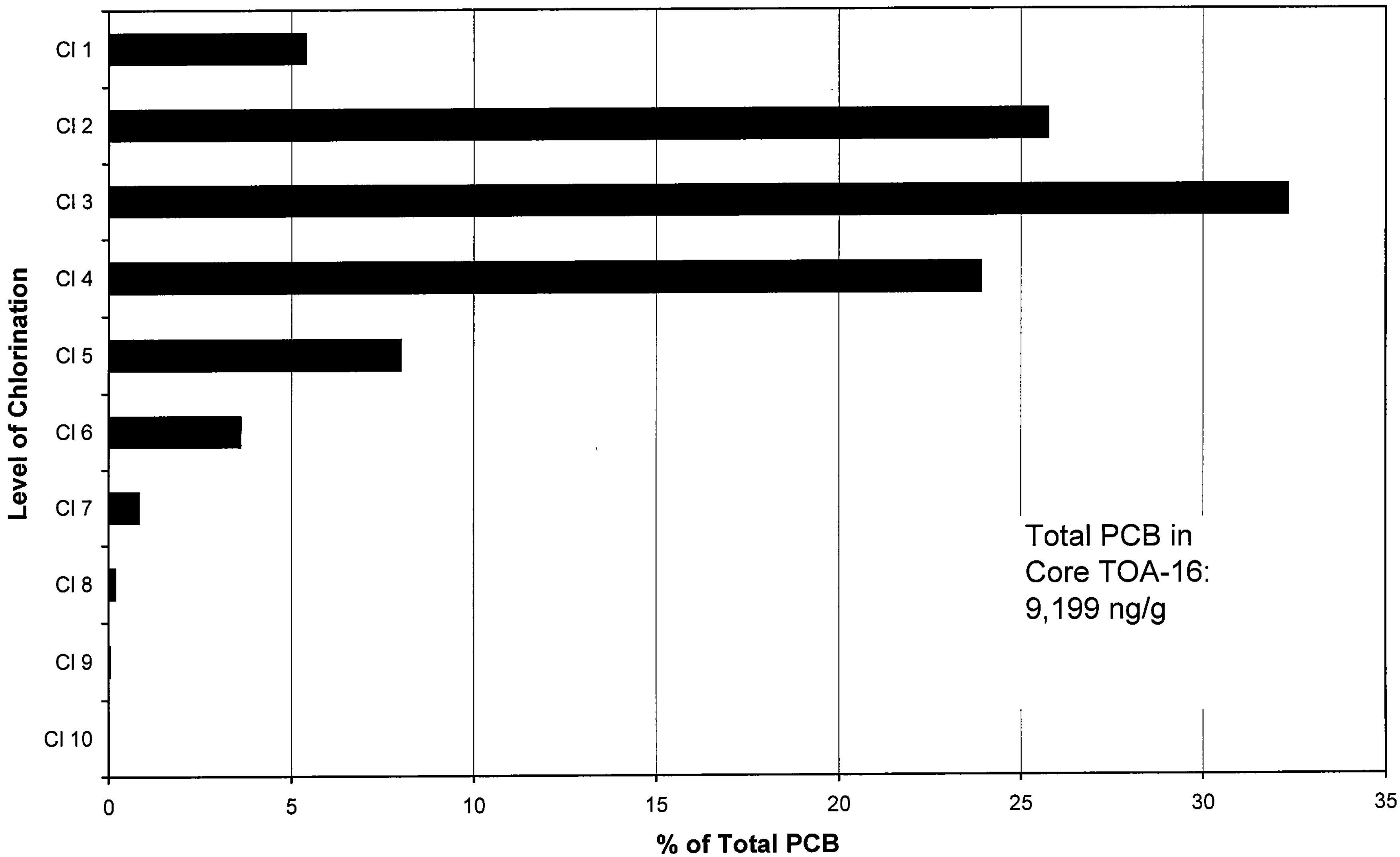
Level of Chlorination, Core TOA-14 (65-70 cm)



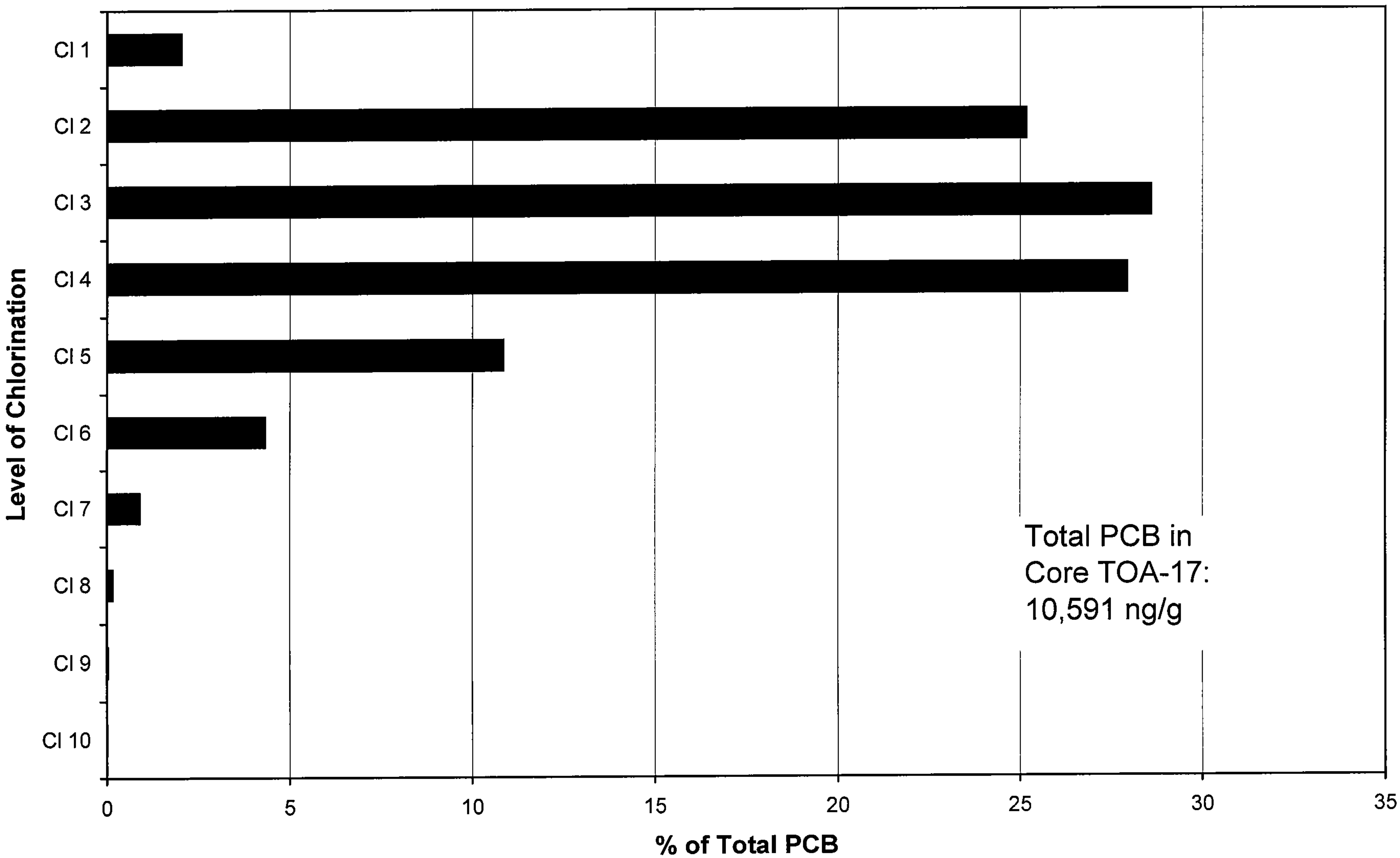


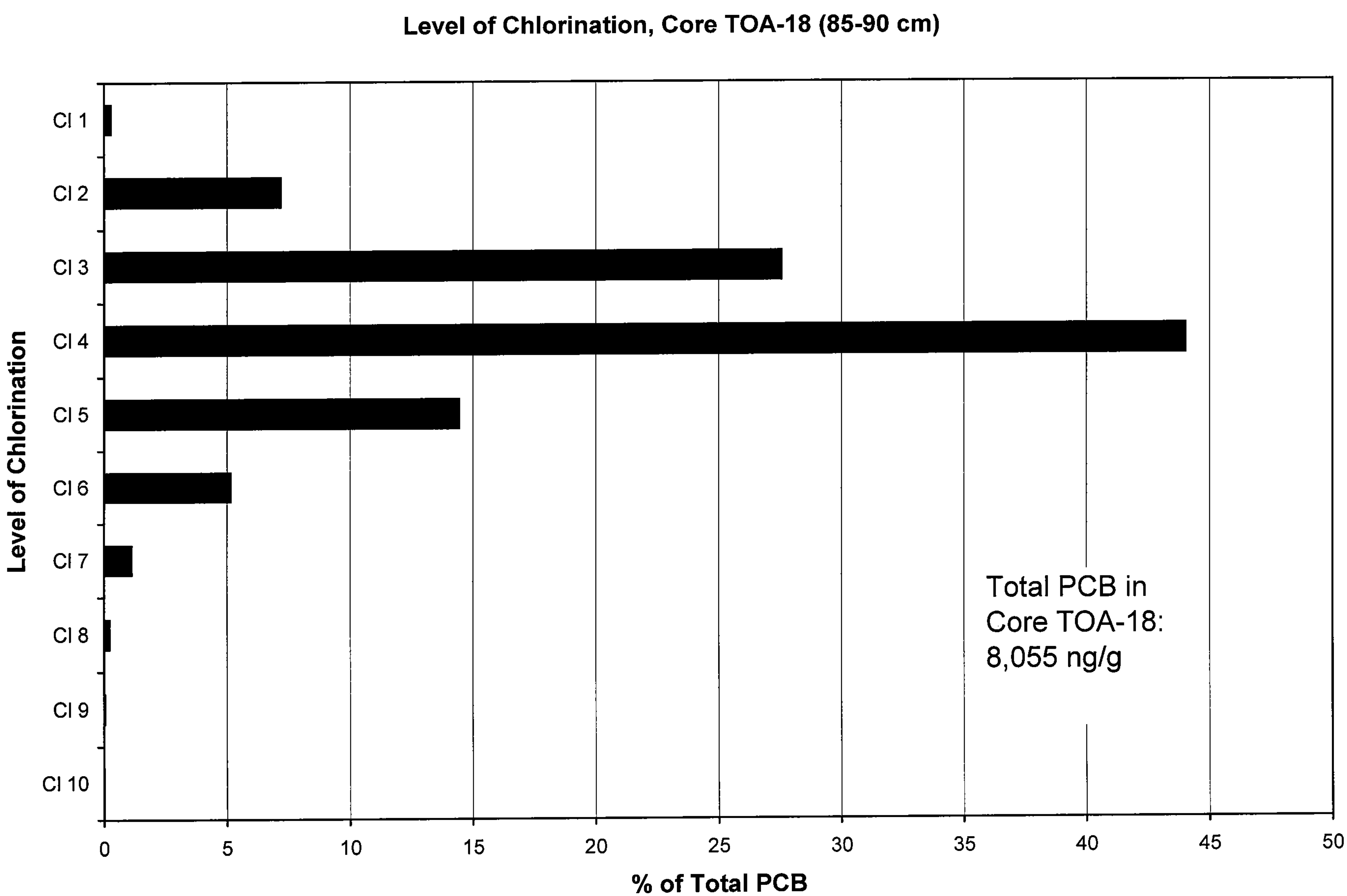
Level of Chlorination, Core TOA-15 (70-75 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOA-15:
11,354 ng/g

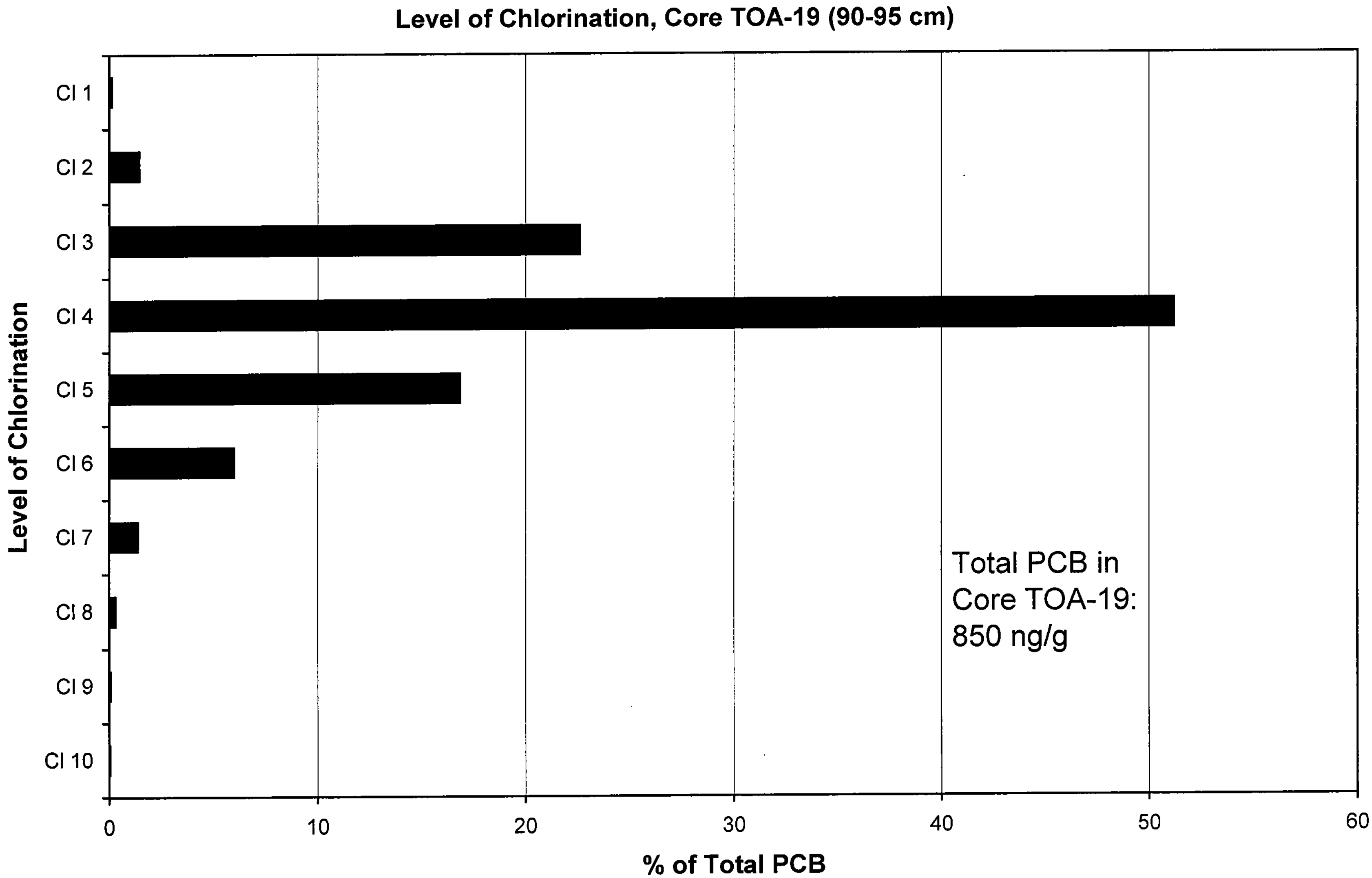
Level of Chlorination, Core TOA-16 (75-80 cm)

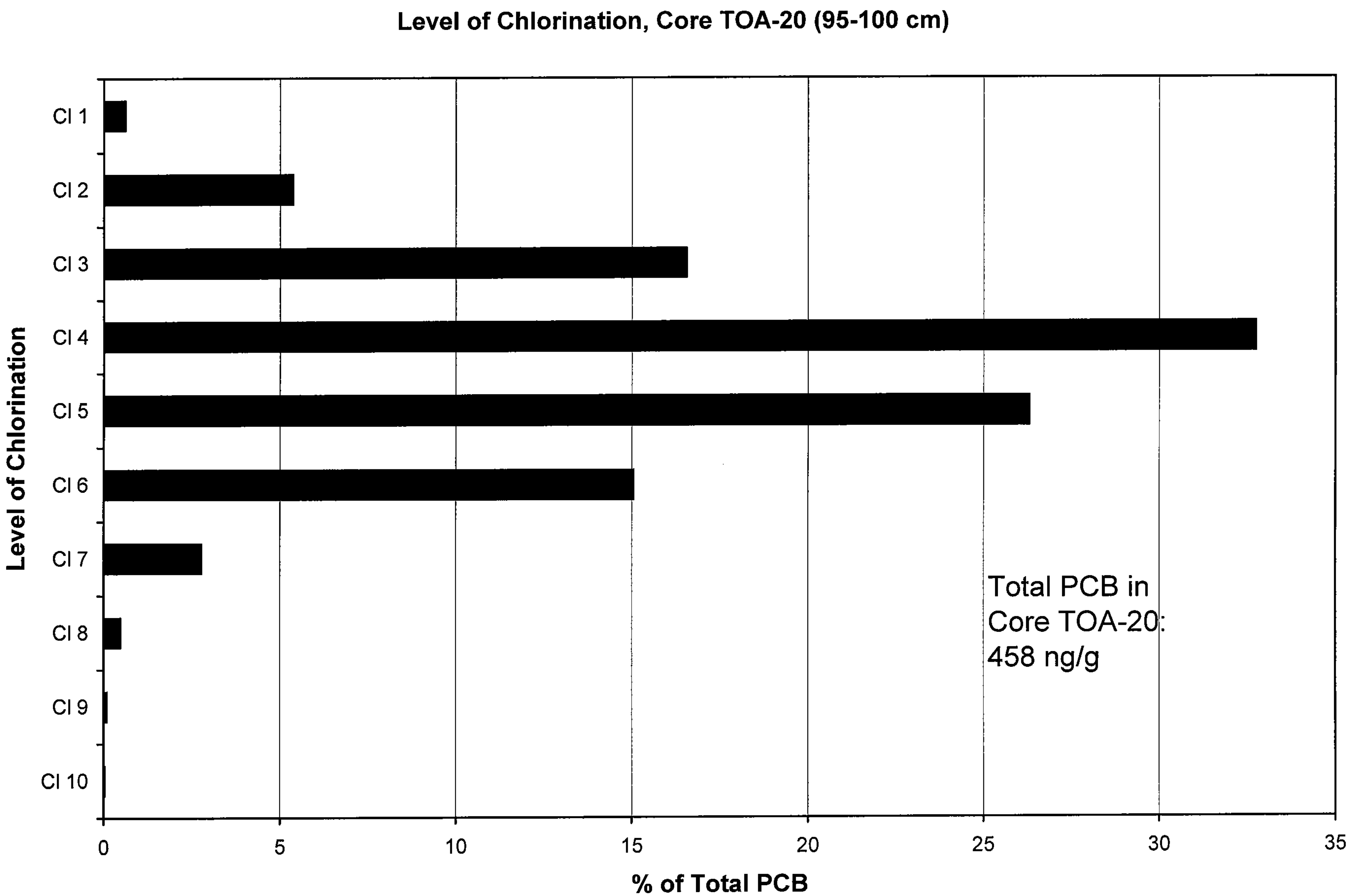


Level of Chlorination, Core TOA-17 (80-85 cm)

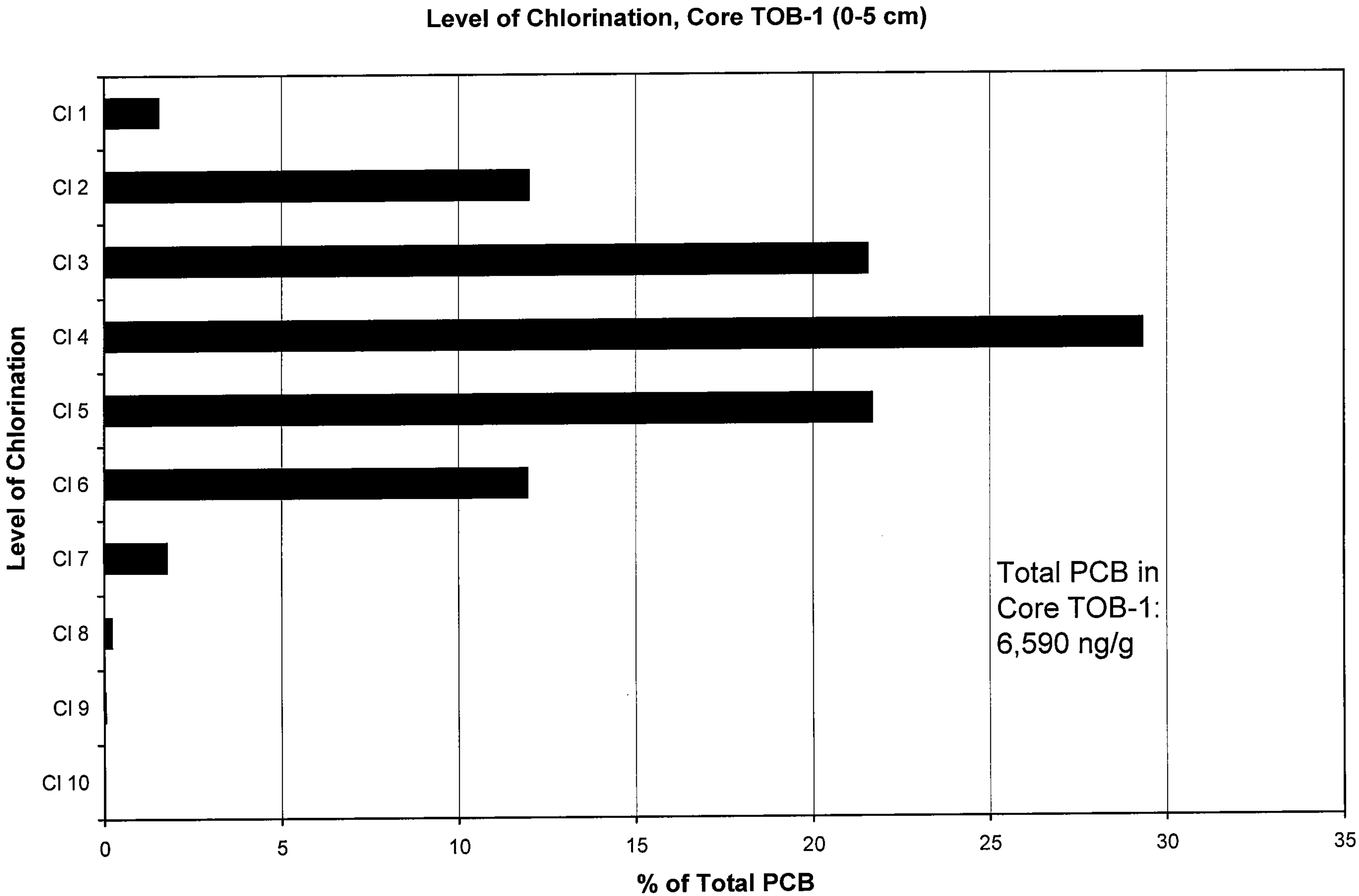



Level of Chlorination, Core TOA-18 (85-90 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
50
% of Total PCB
Total PCB in
Core TOA-18:
8,055 ng/g

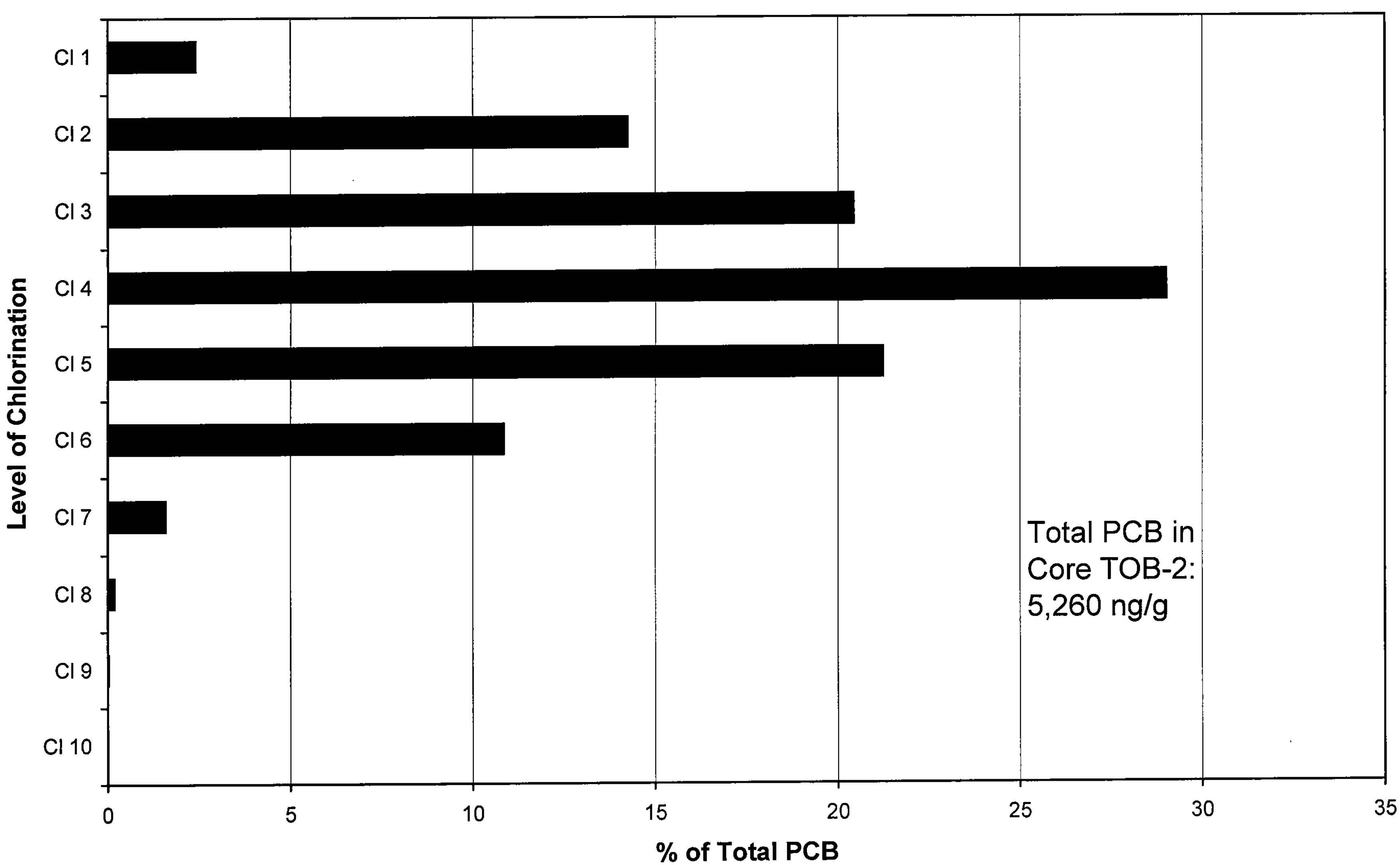

Level of Chlorination, Core TOA-19 (90-95 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
10
20
30
40
50
60
% of Total PCB
Total PCB in
Core TOA-19:
850 ng/g



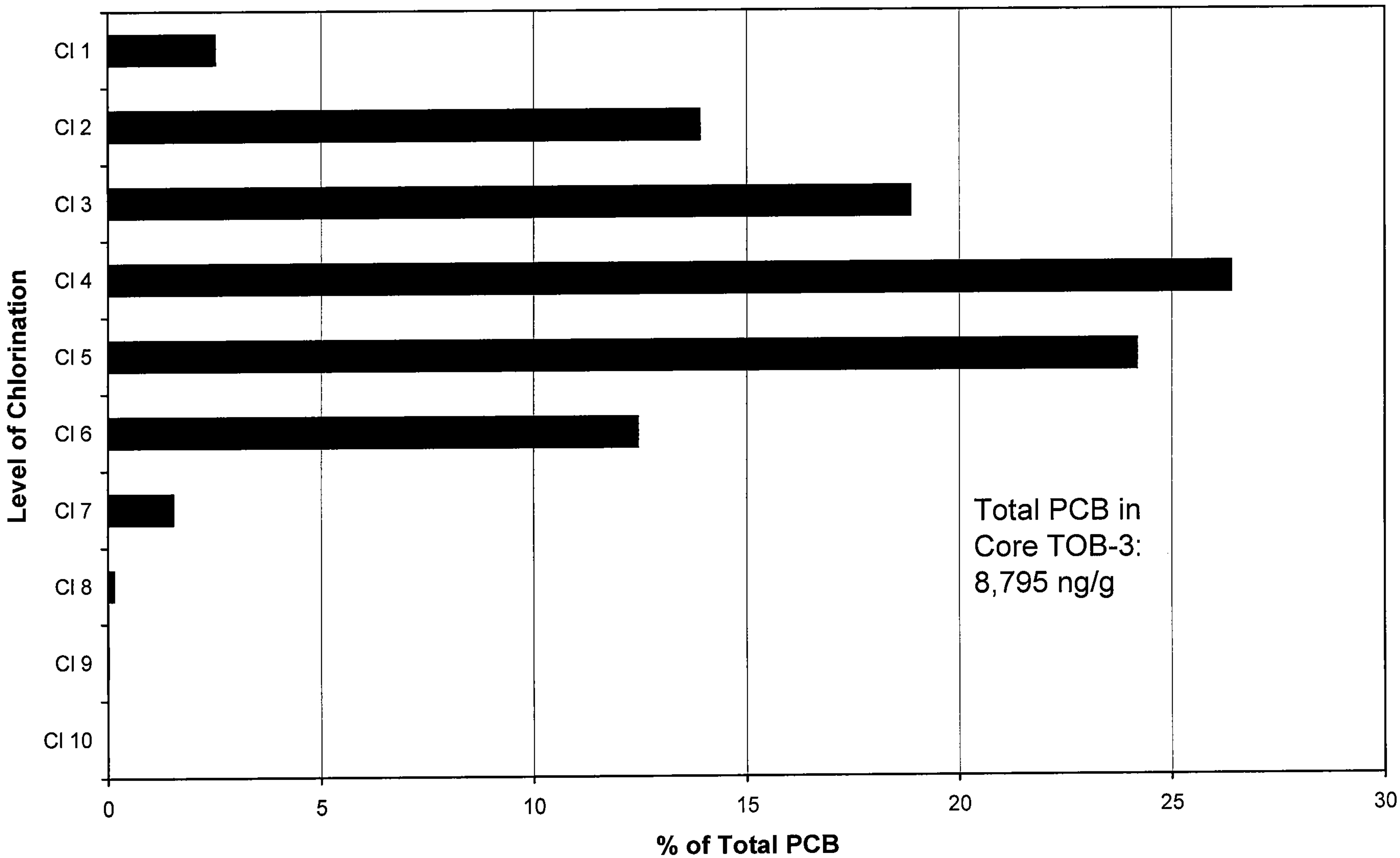
Level of Chlorination, Core TOA-20 (95-100 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOA-20:
458 ng/g

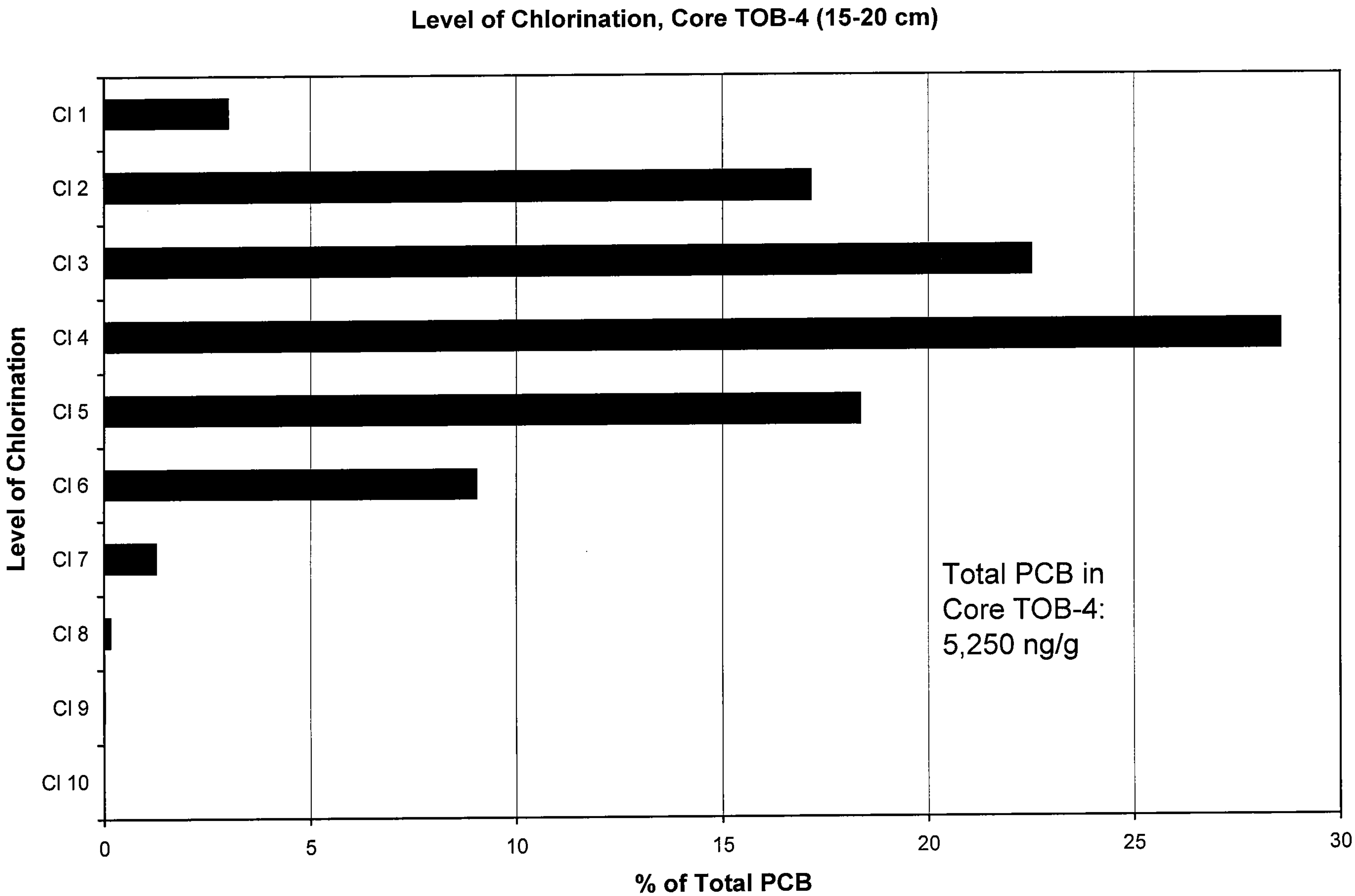

Level of Chlorination, Core TOB-1 (0-5 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOB-1:
6,590 ng/g

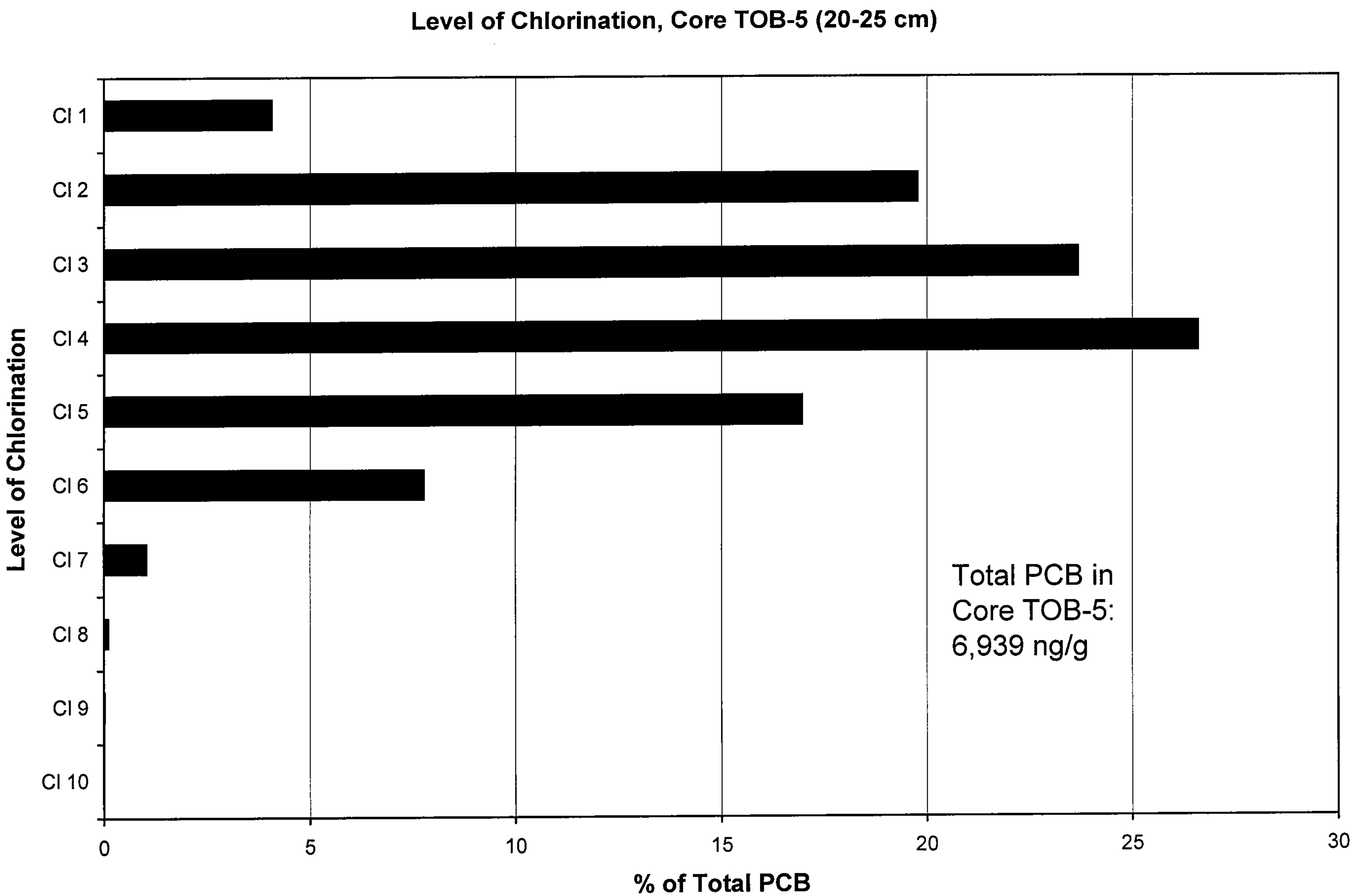
Level of Chlorination, Core TOB-2 (5-10 cm)

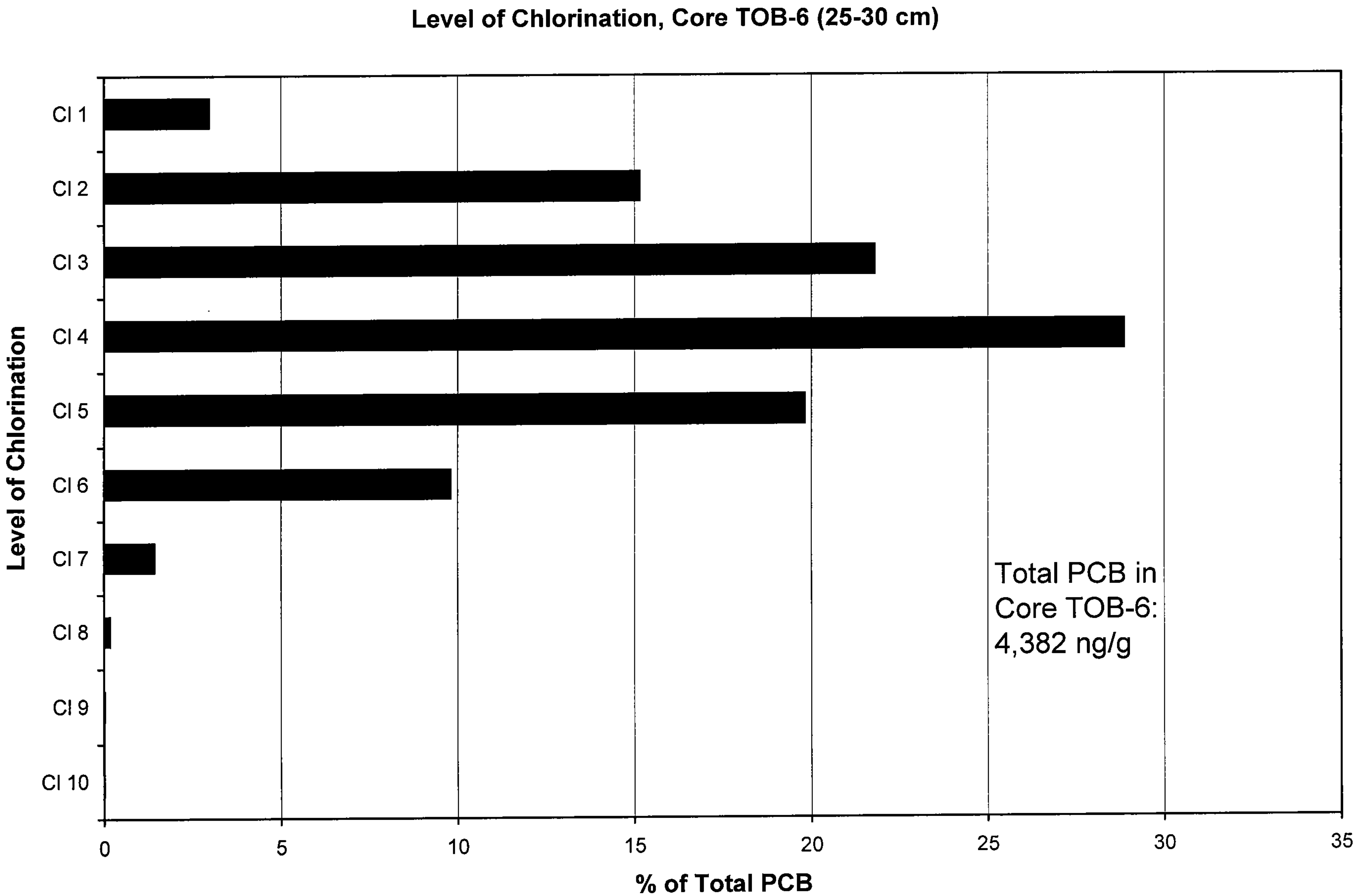


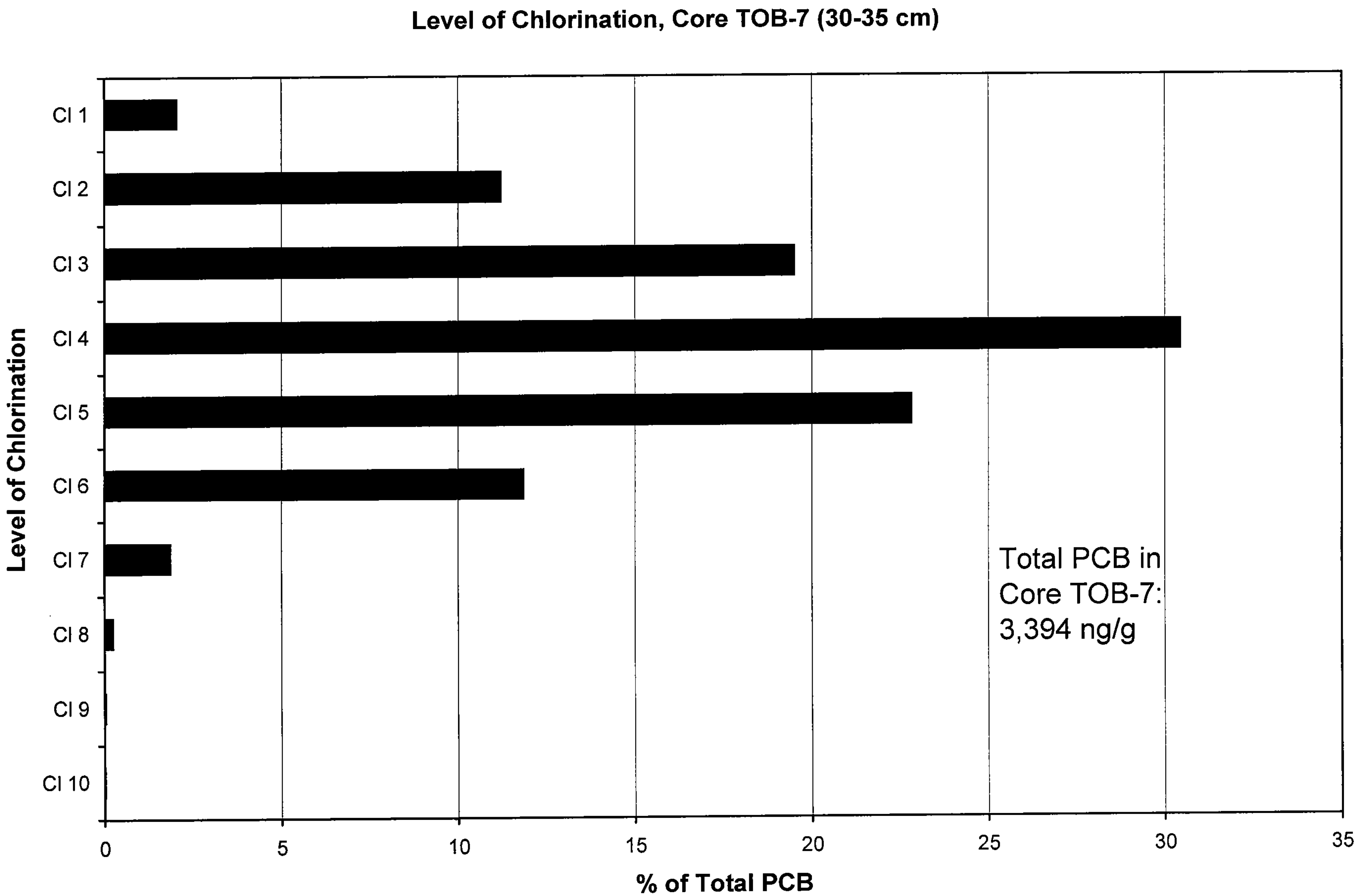
Level of Chlorination, Core TOB-3 (10-15 cm)



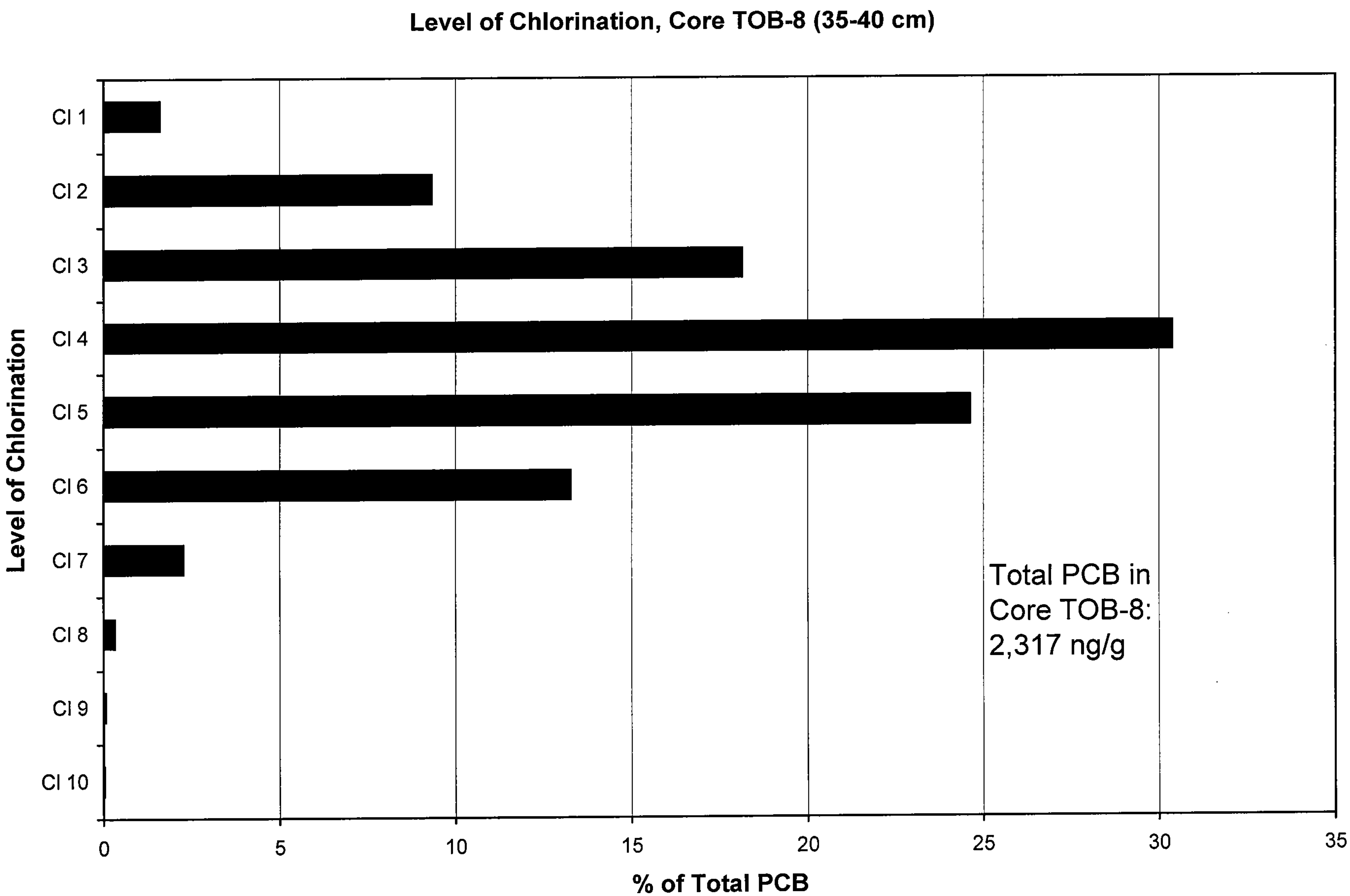

Level of Chlorination, Core TOB-4 (15-20 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
% of Total PCB
Total PCB in Core TOB-4: 5,250 ng/g

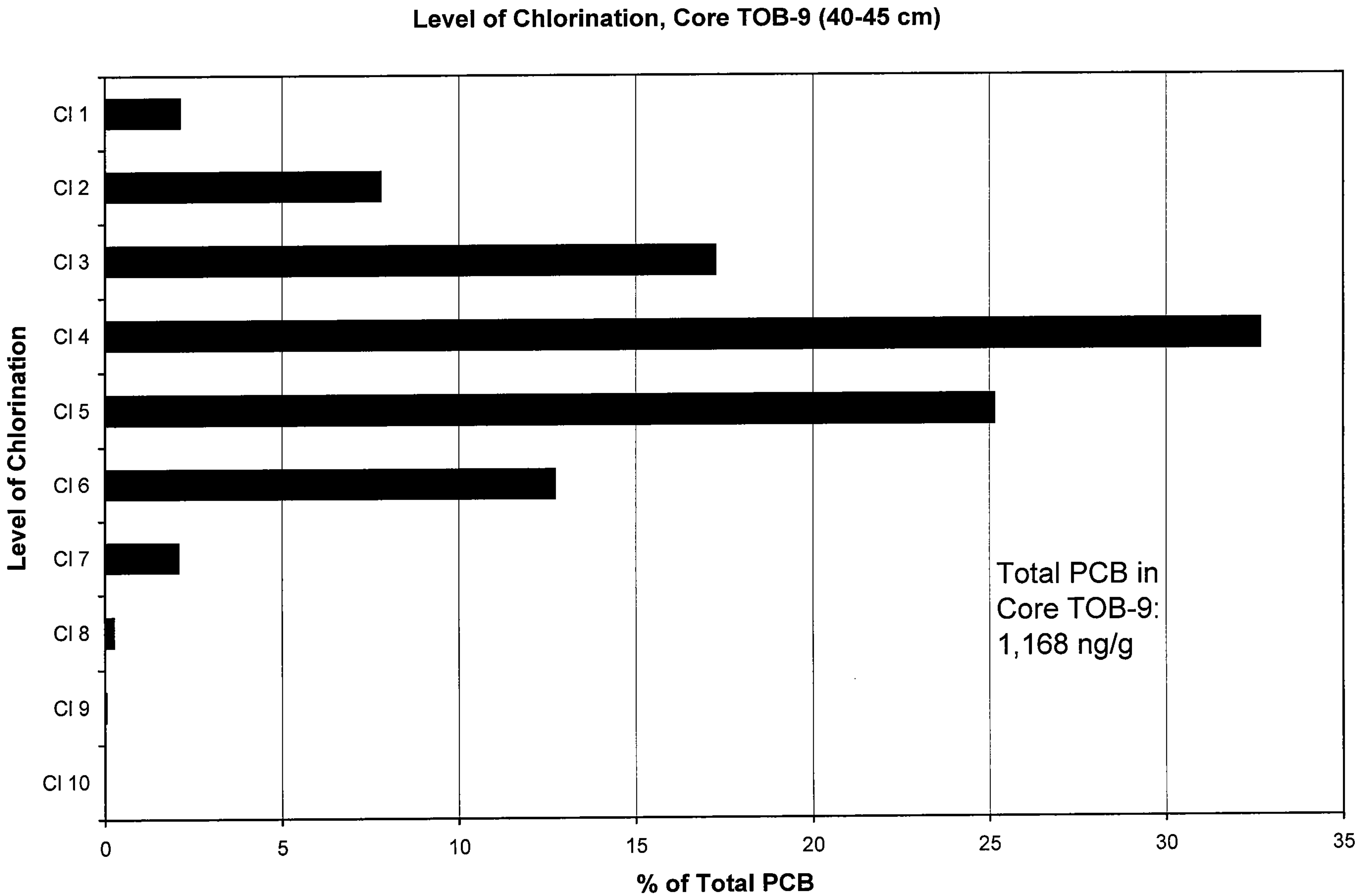

Level of Chlorination, Core TOB-5 (20-25 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
% of Total PCB
Total PCB in
Core TOB-5:
6,939 ng/g

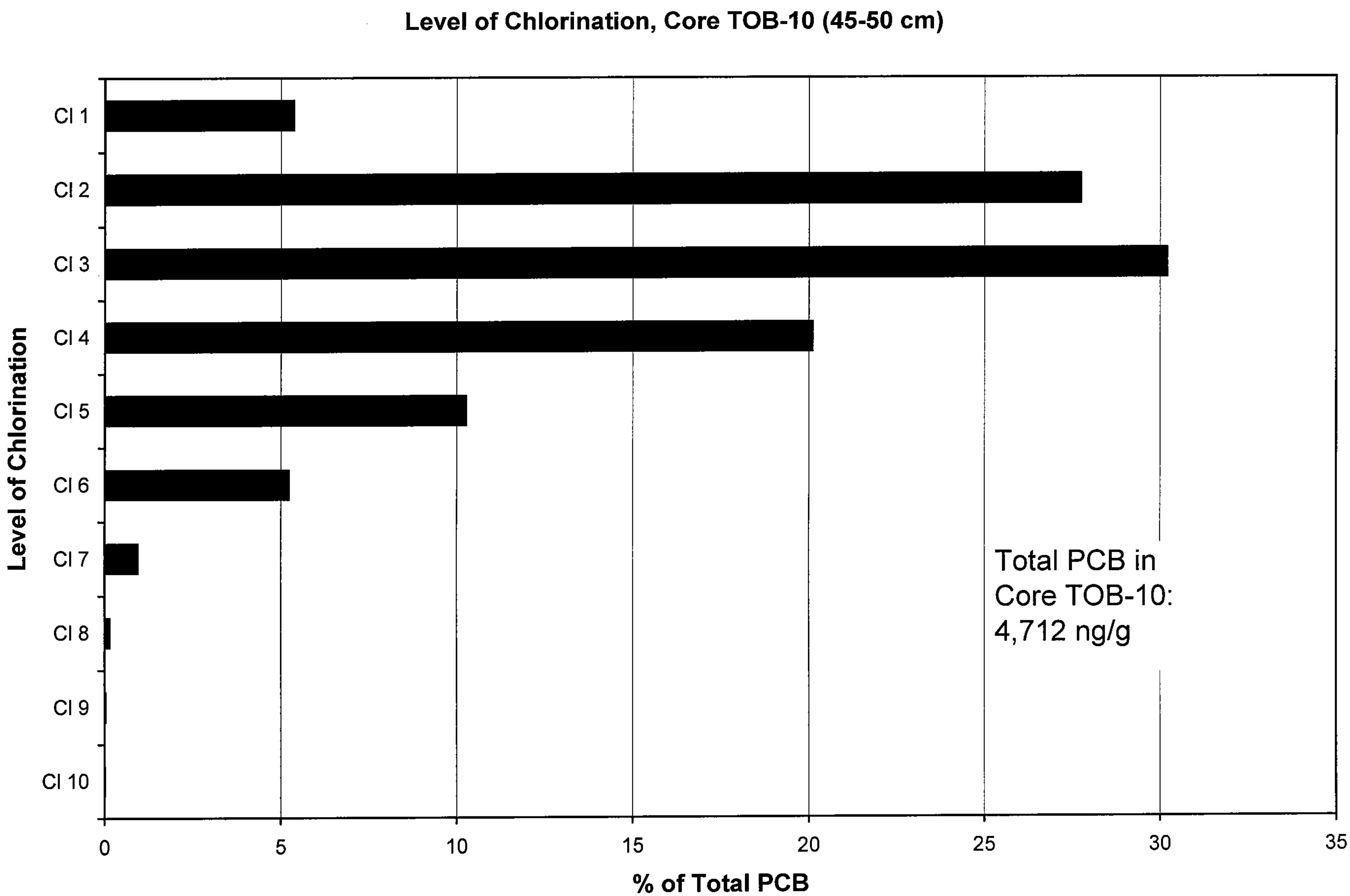

Level of Chlorination, Core TOB-6 (25-30 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in Core TOB-6: 4,382 ng/g



Level of Chlorination, Core TOB-7 (30-35 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOB-7:
3,394 ng/g

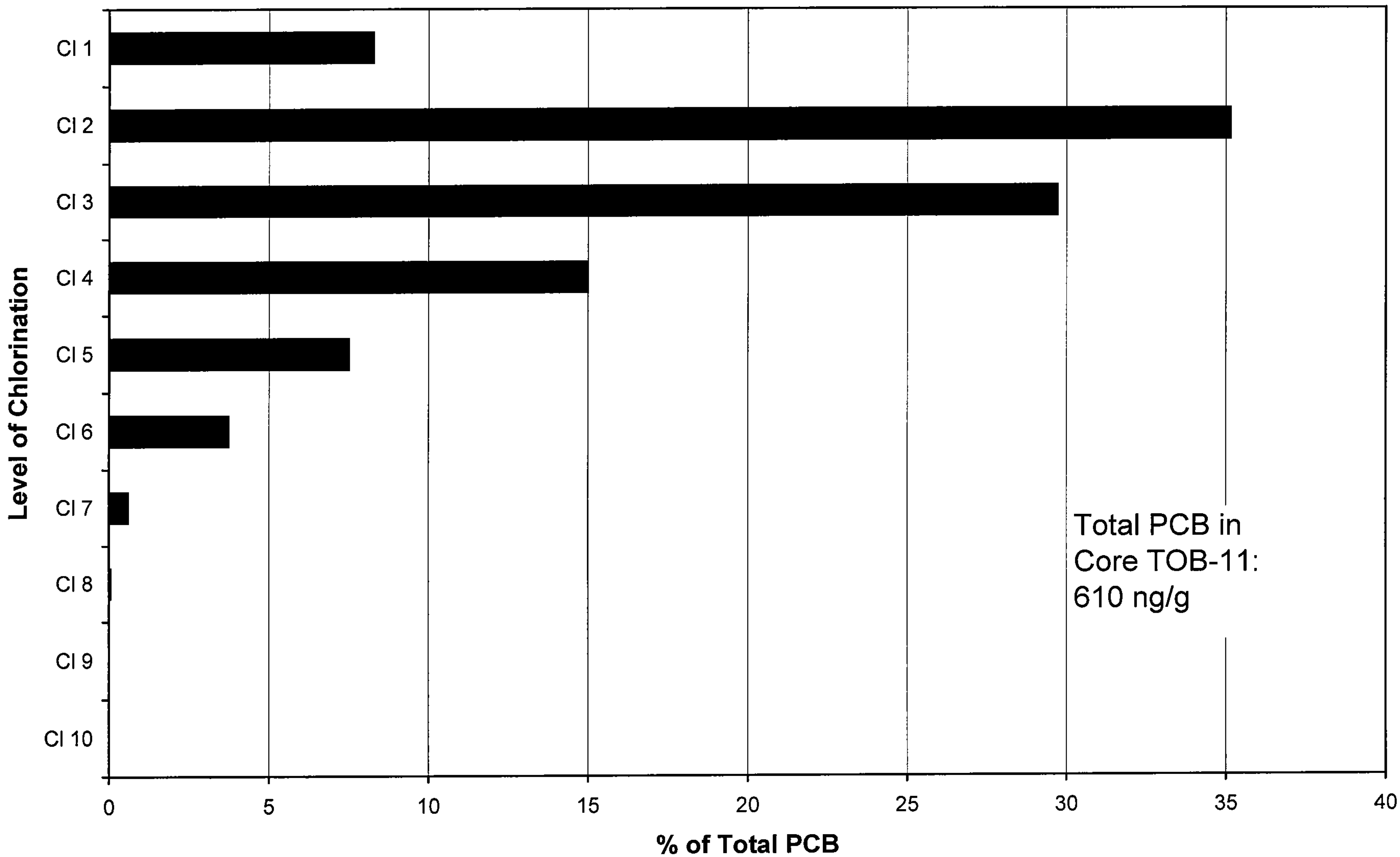

Level of Chlorination, Core TOB-8 (35-40 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOB-8:
2,317 ng/g

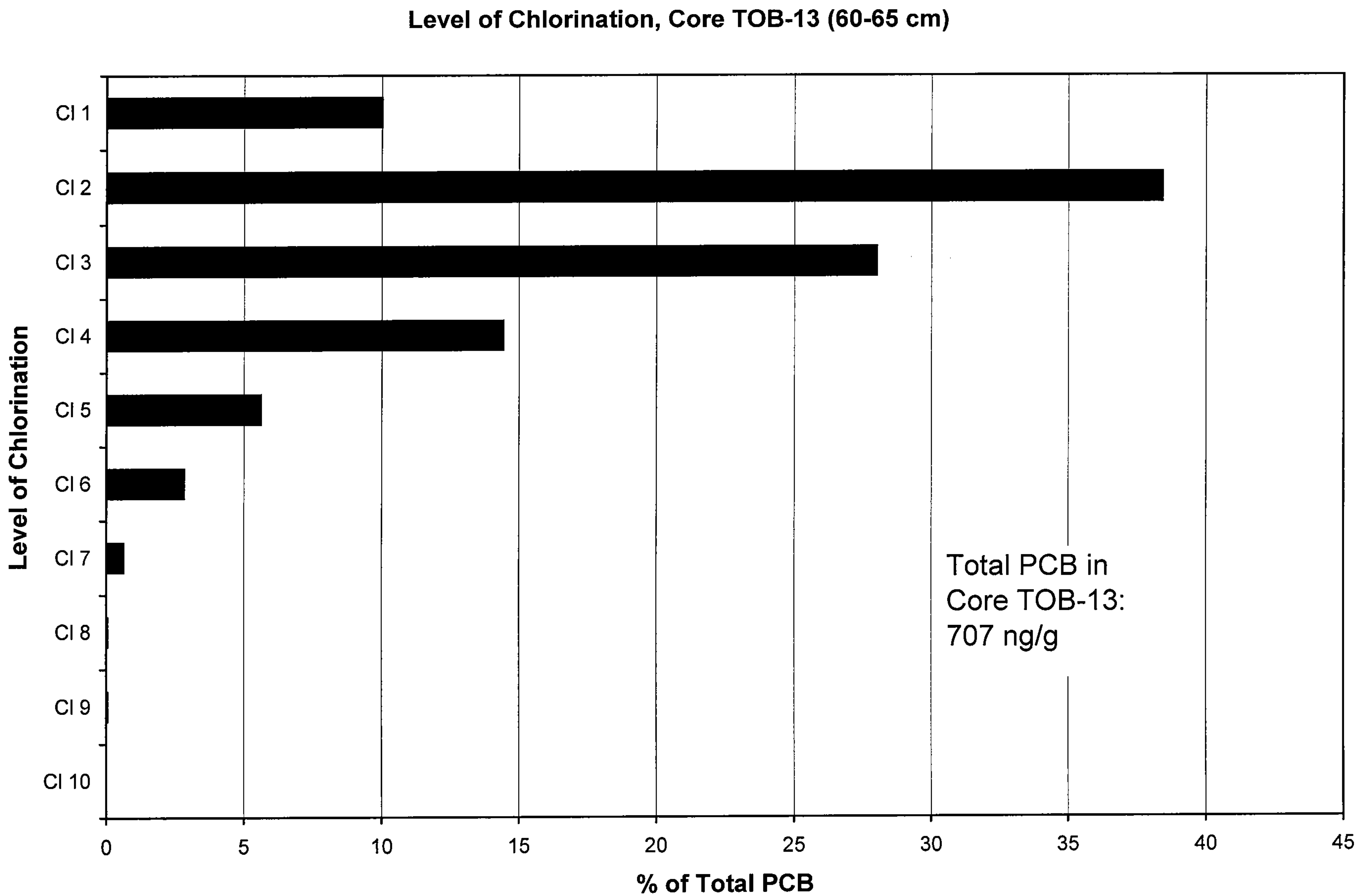

Level of Chlorination, Core TOB-9 (40-45 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOB-9:
1,168 ng/g

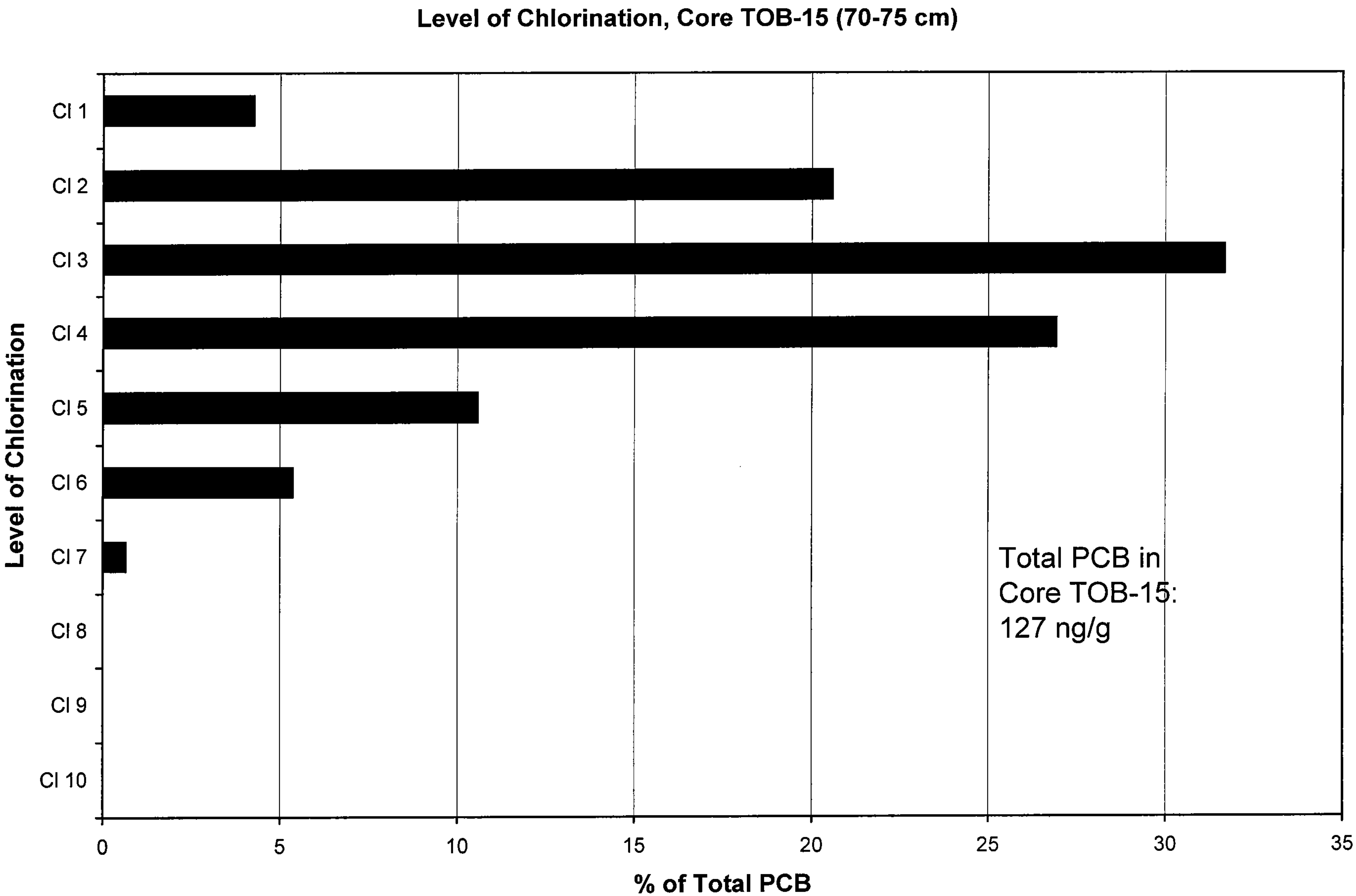


Level of Chlorination, Core TOB-10 (45-50 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOB-10:
4,712 ng/g

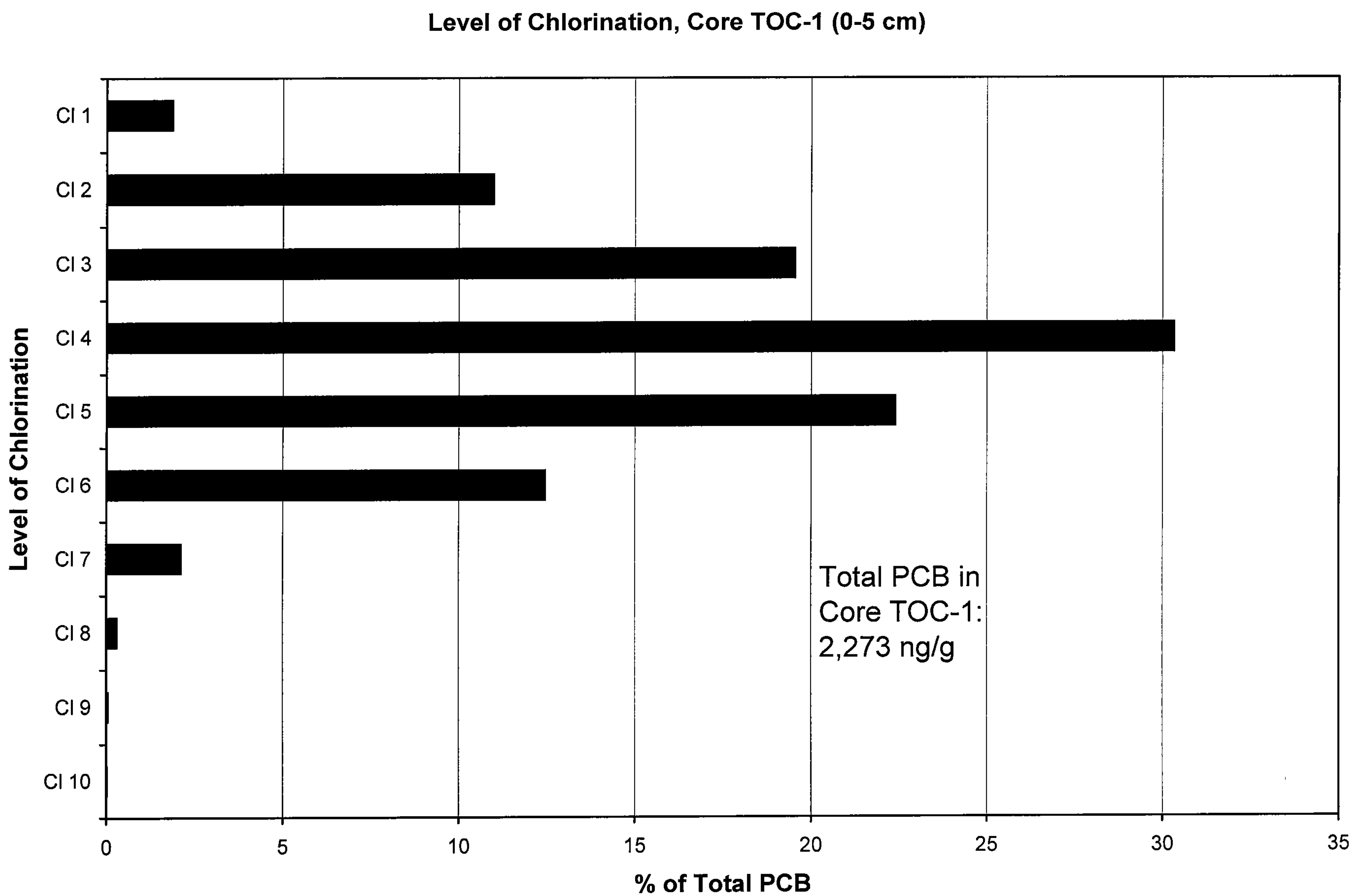
Level of Chlorination, Core TOB-11 (50-55 cm)

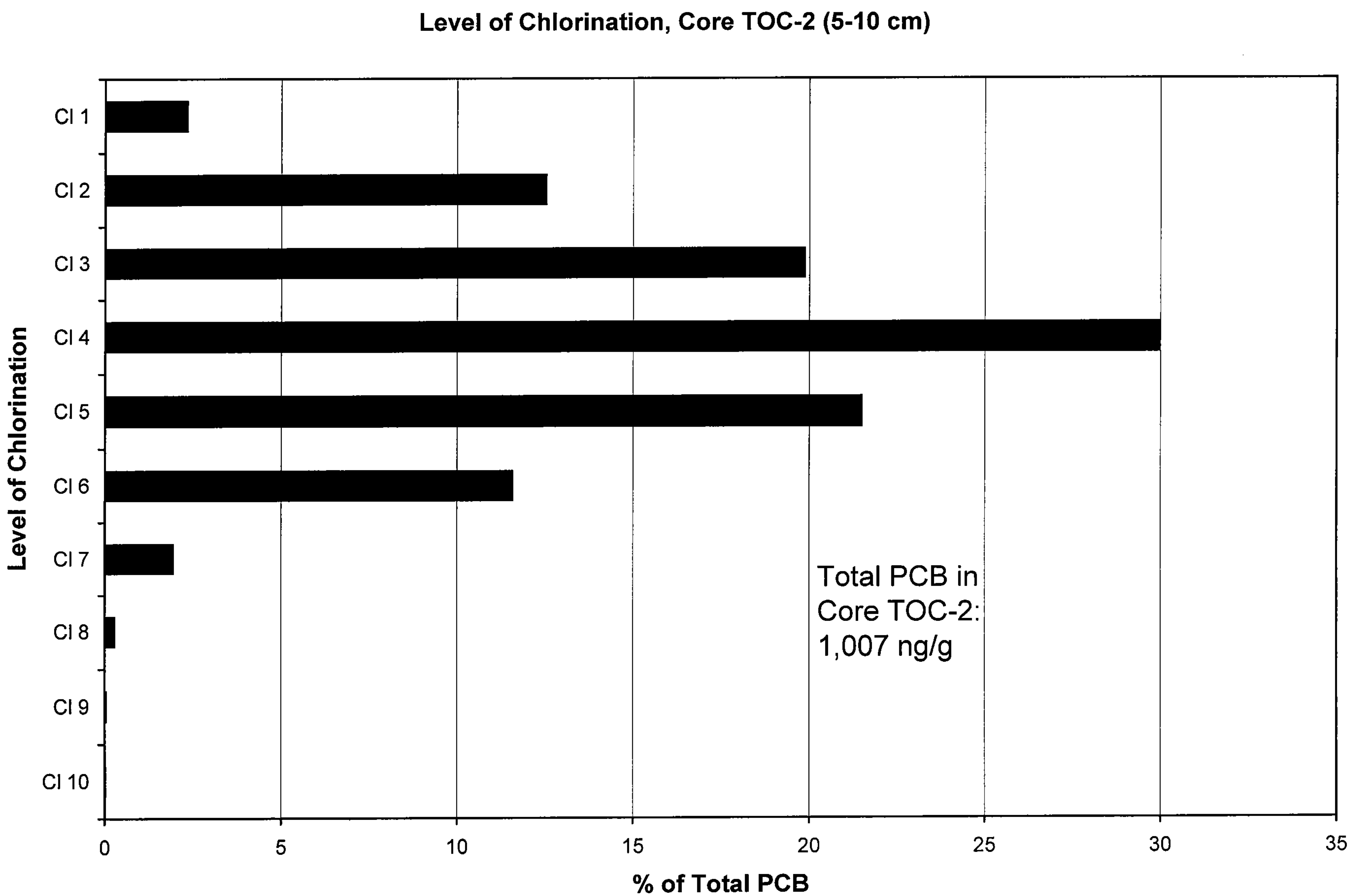



Level of Chlorination, Core TOB-13 (60-65 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
40
45
% of Total PCB
Total PCB in
Core TOB-13:
707 ng/g

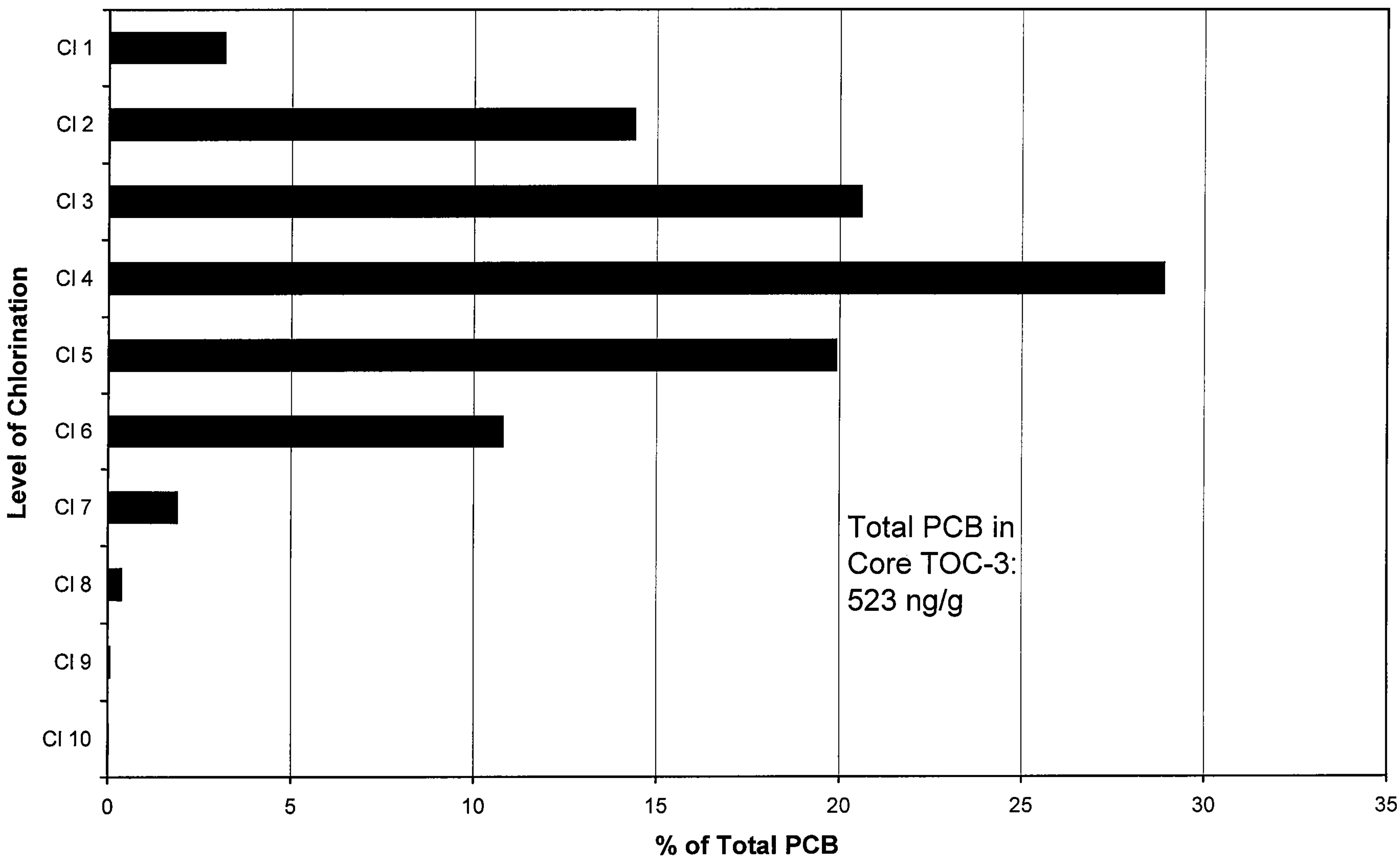


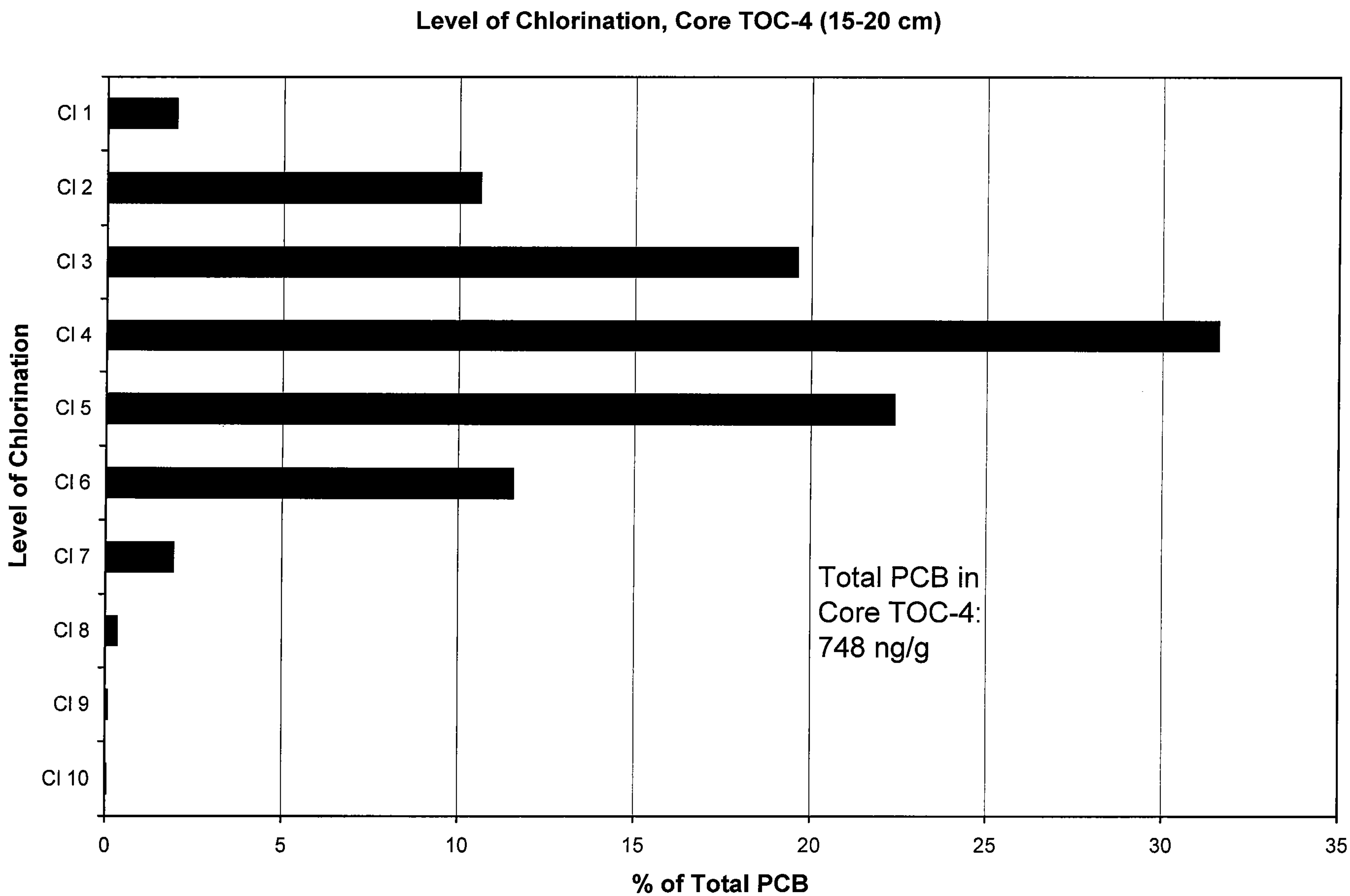
Level of Chlorination, Core TOB-15 (70-75 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOB-15:
127 ng/g

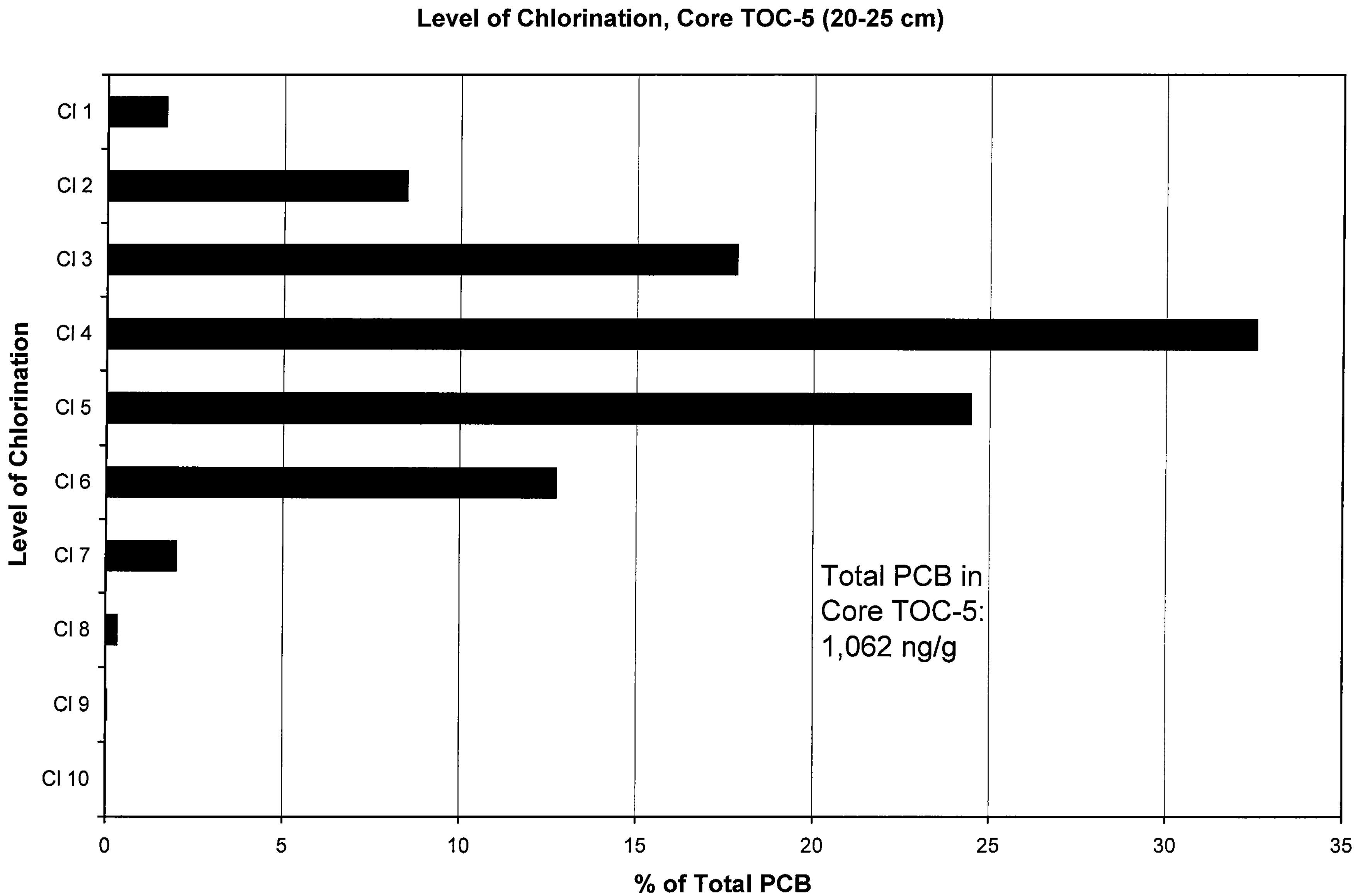

Level of Chlorination, Core TOC-1 (0-5 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in Core TOC-1: 2,273 ng/g


Level of Chlorination, Core TOC-2 (5-10 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in Core TOC-2: 1,007 ng/g

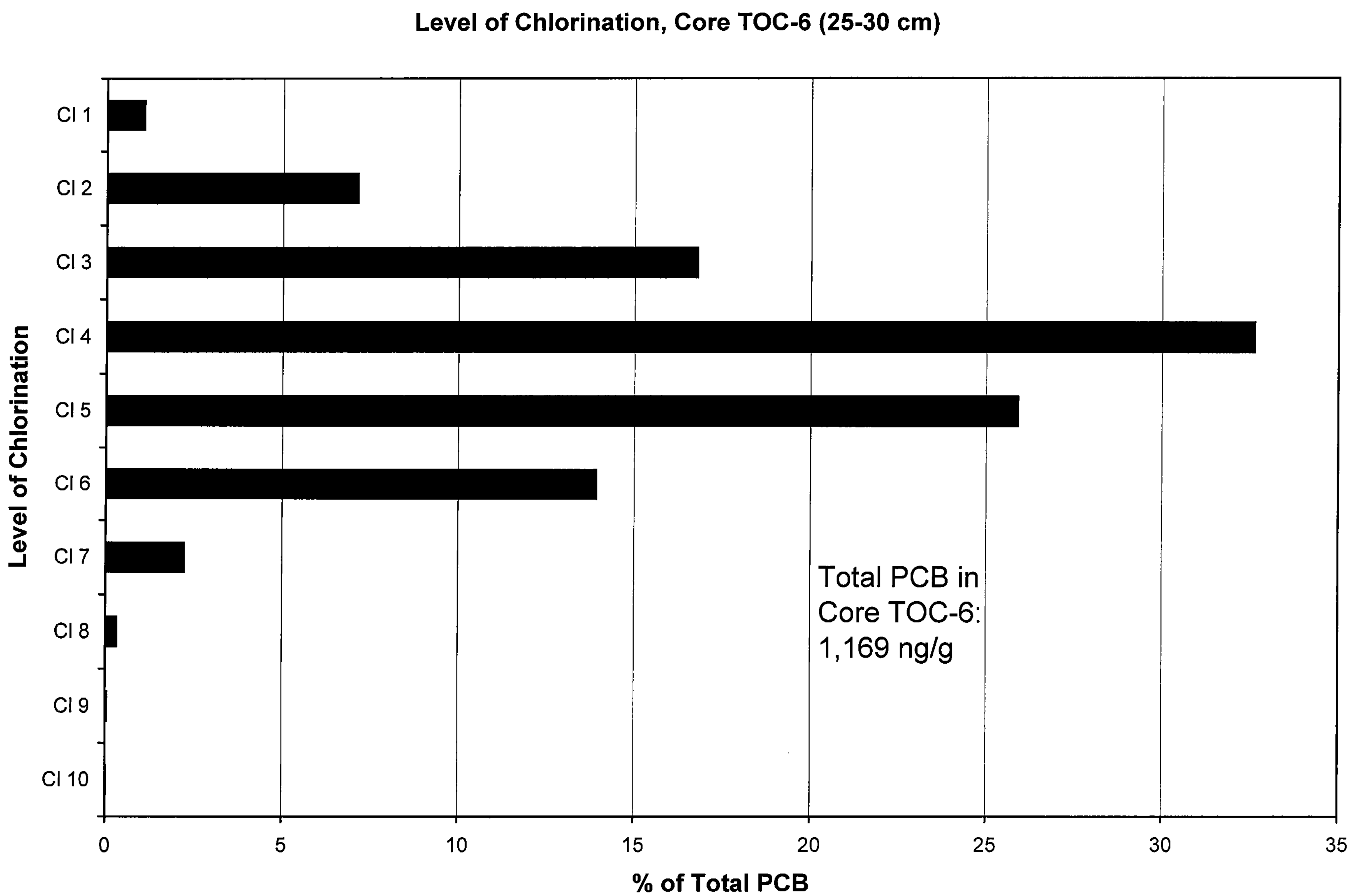
Level of Chlorination, Core TOC-3 (10-15 cm)

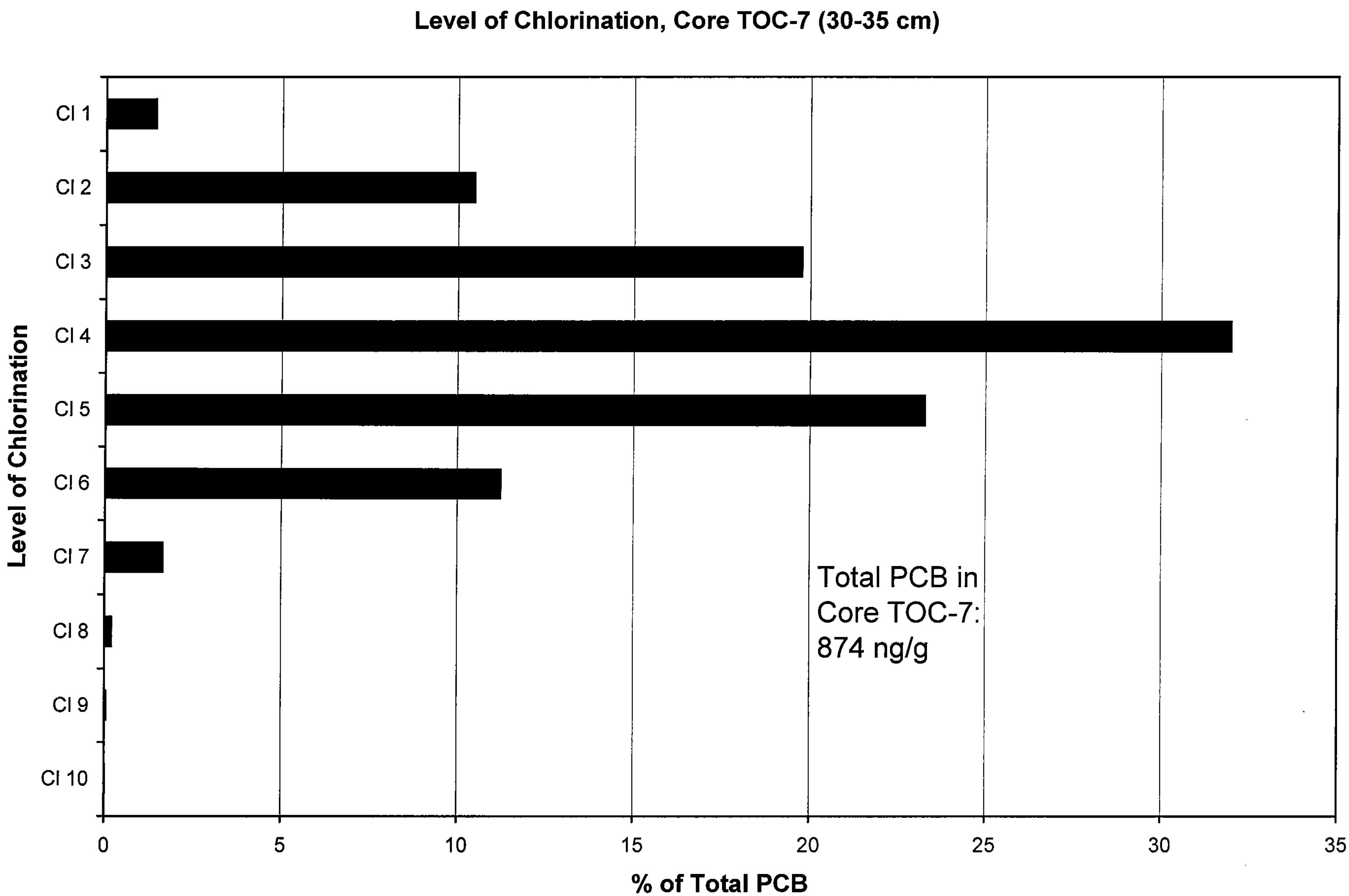


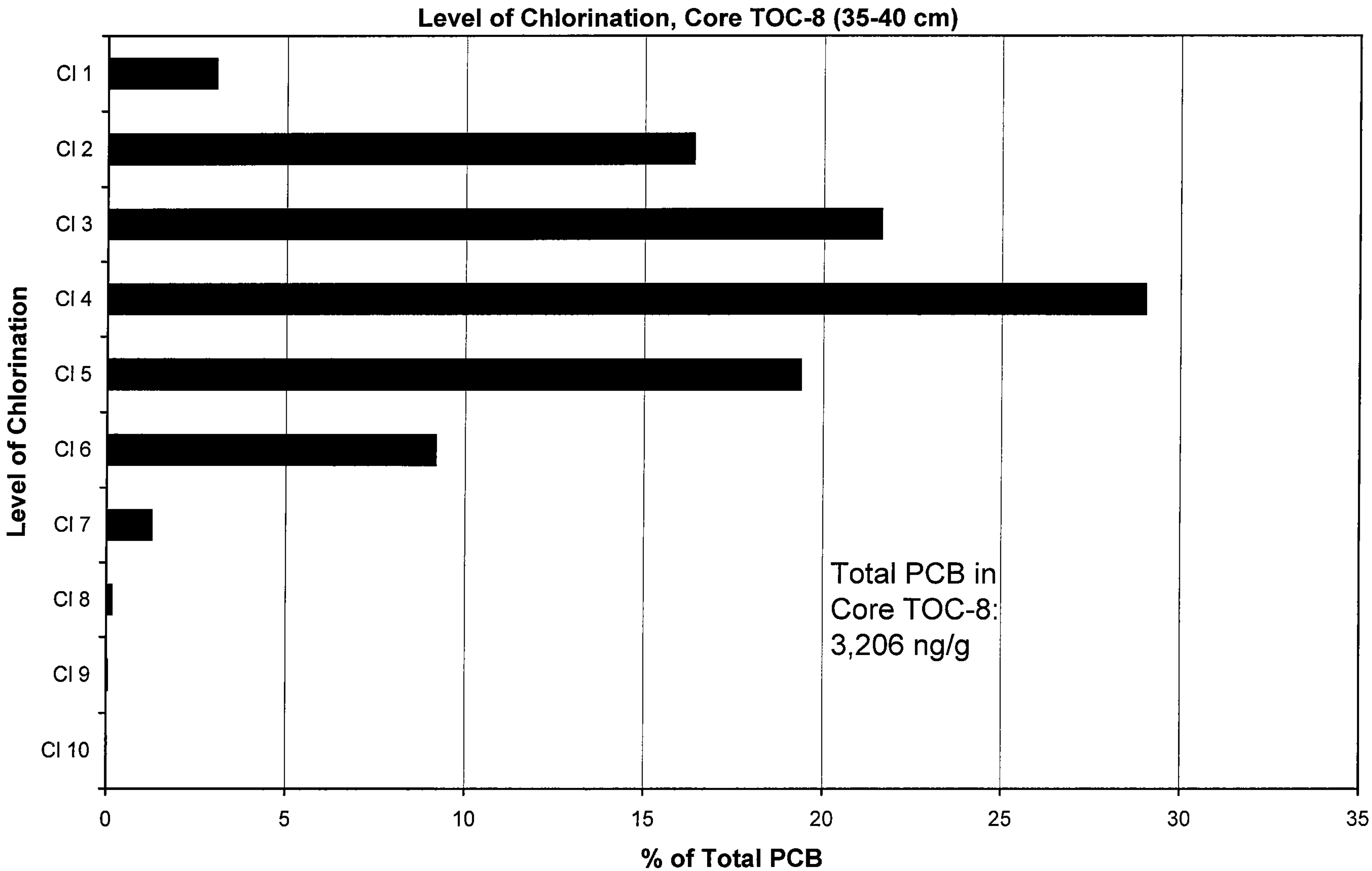

Level of Chlorination, Core TOC-4 (15-20 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOC-4:
748 ng/g

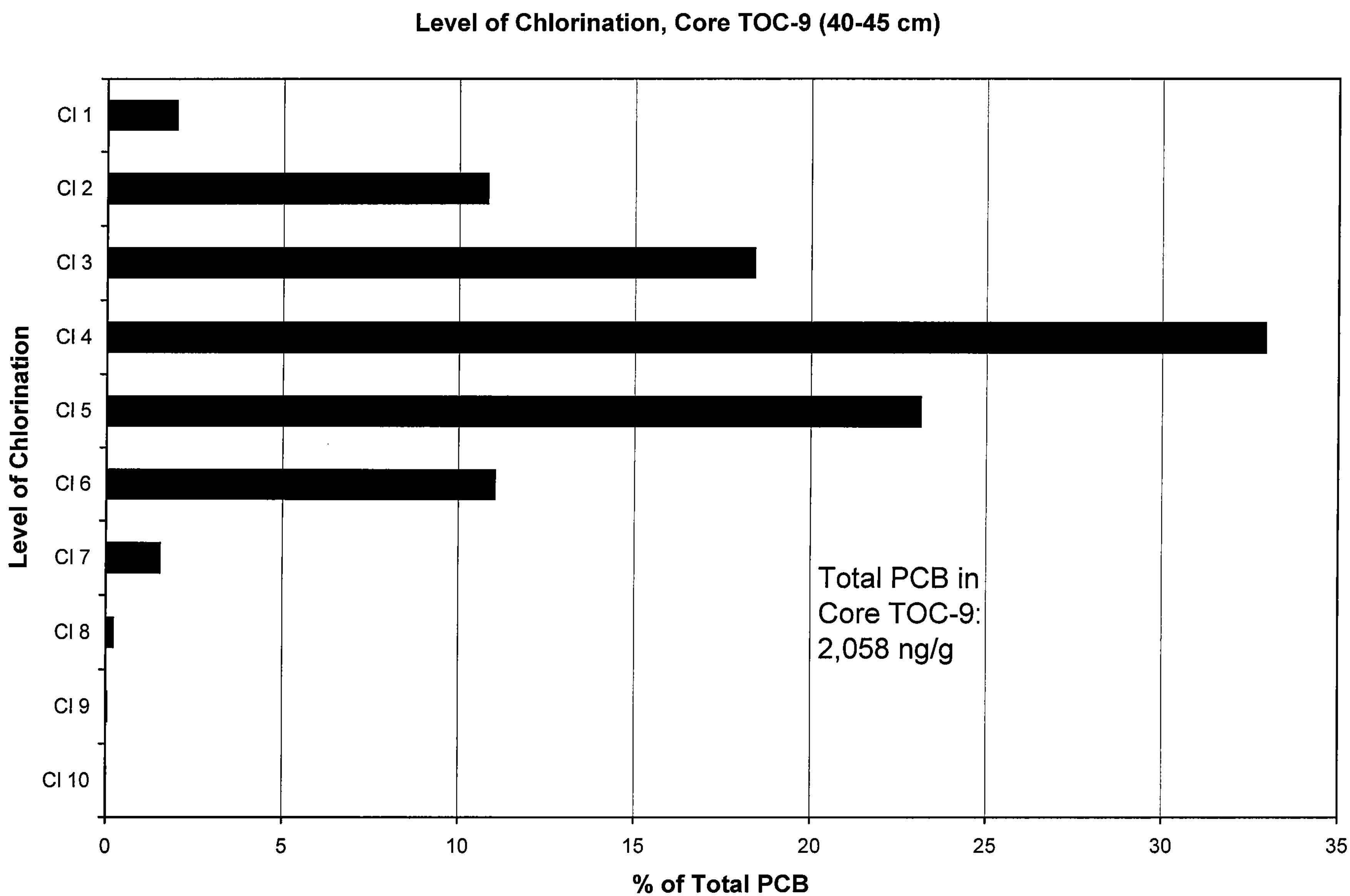


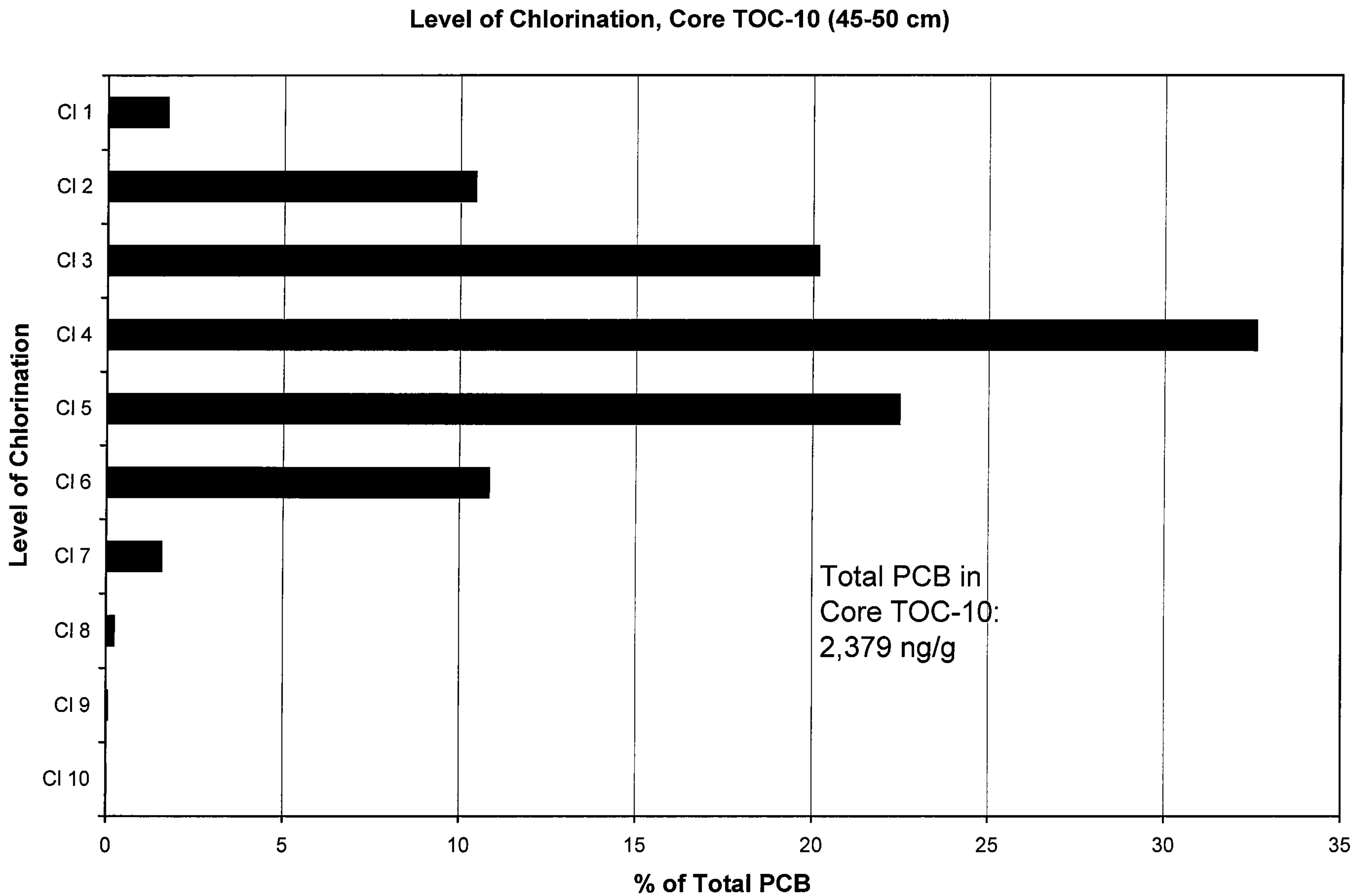
Level of Chlorination, Core TOC-5 (20-25 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in Core TOC-5: 1,062 ng/g

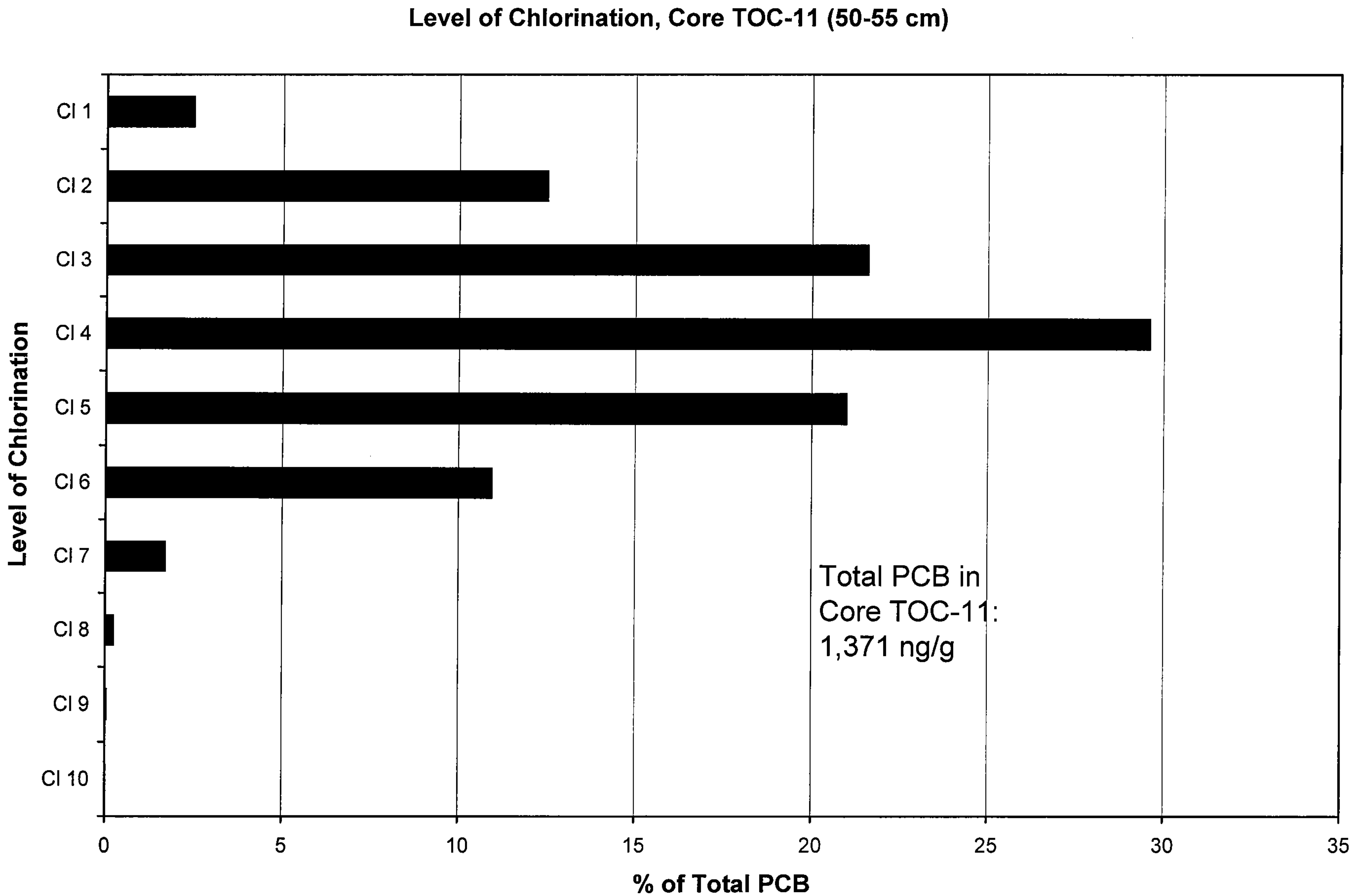

Level of Chlorination, Core TOC-6 (25-30 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOC-6:
1,169 ng/g

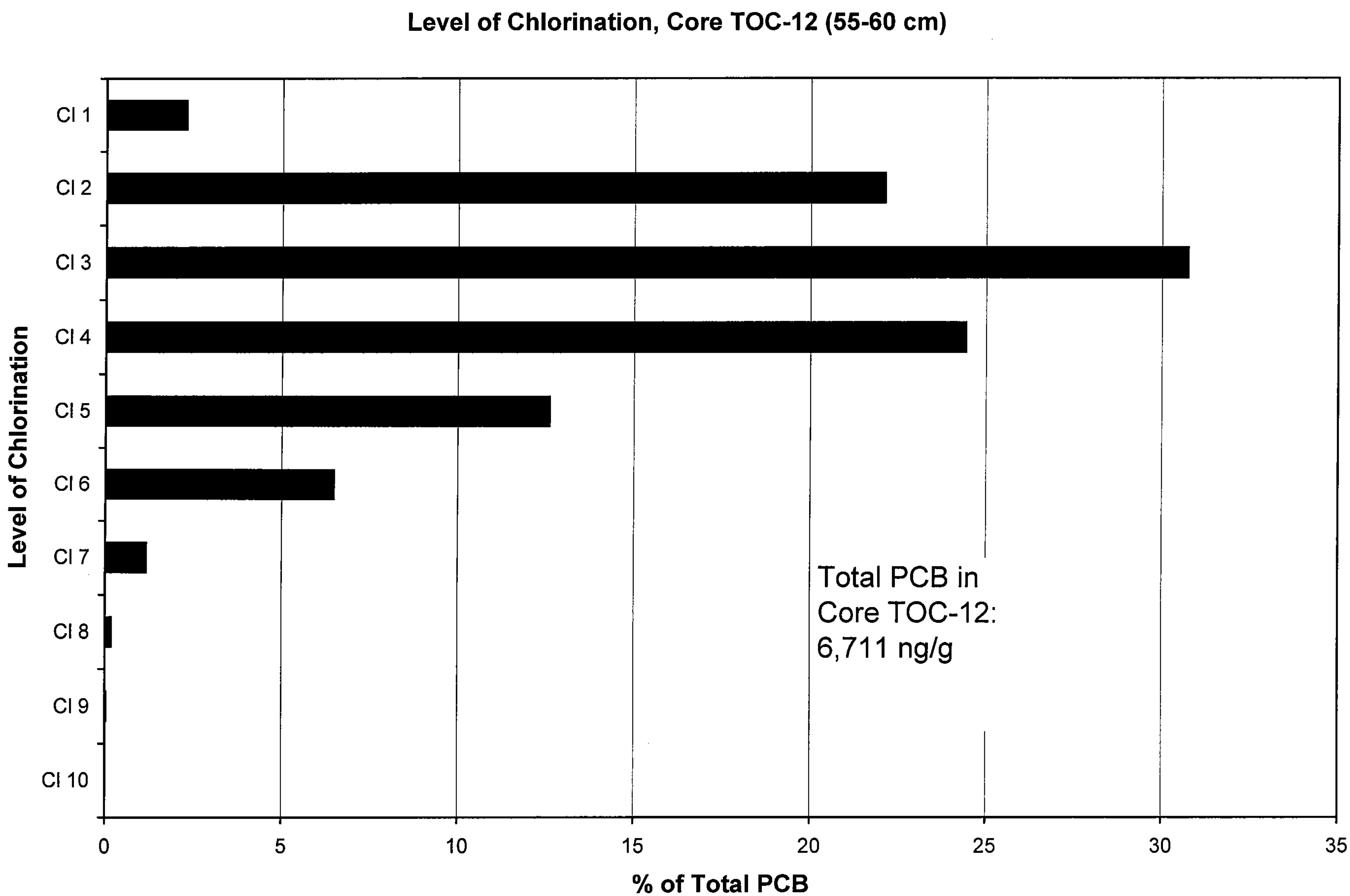

Level of Chlorination, Core TOC-7 (30-35 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Total PCB in Core TOC-7: 874 ng/g
0
5
10
15
20
25
30
35
% of Total PCB


Level of Chlorination, Core TOC-8 (35-40 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOC-8:
3,206 ng/g

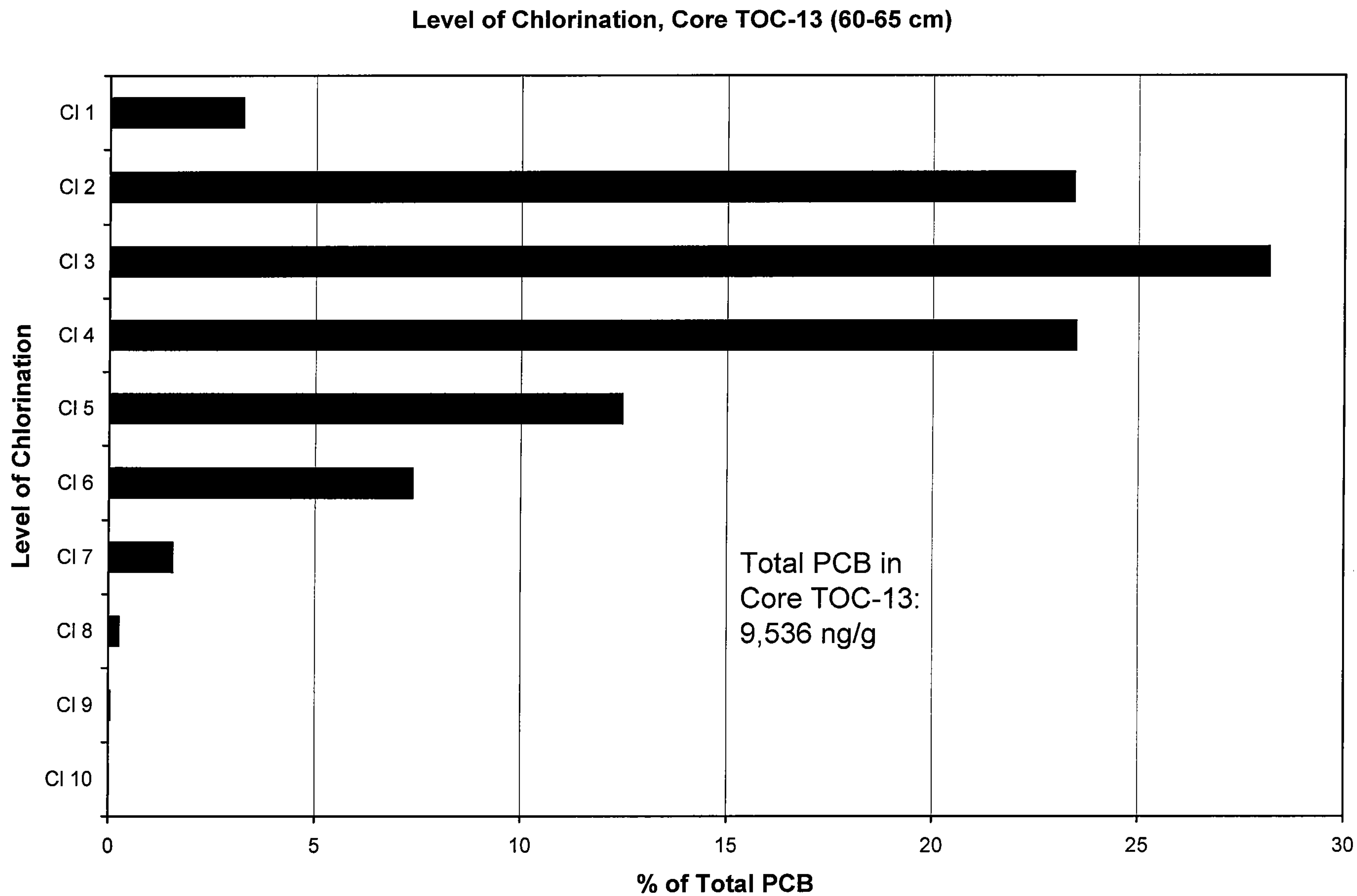

Level of Chlorination, Core TOC-9 (40-45 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Total PCB in
Core TOC-9:
2,058 ng/g
0
5
10
15
20
25
30
35
% of Total PCB


Level of Chlorination, Core TOC-10 (45-50 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Total PCB in
Core TOC-10:
2,379 ng/g
0
5
10
15
20
25
30
35
% of Total PCB

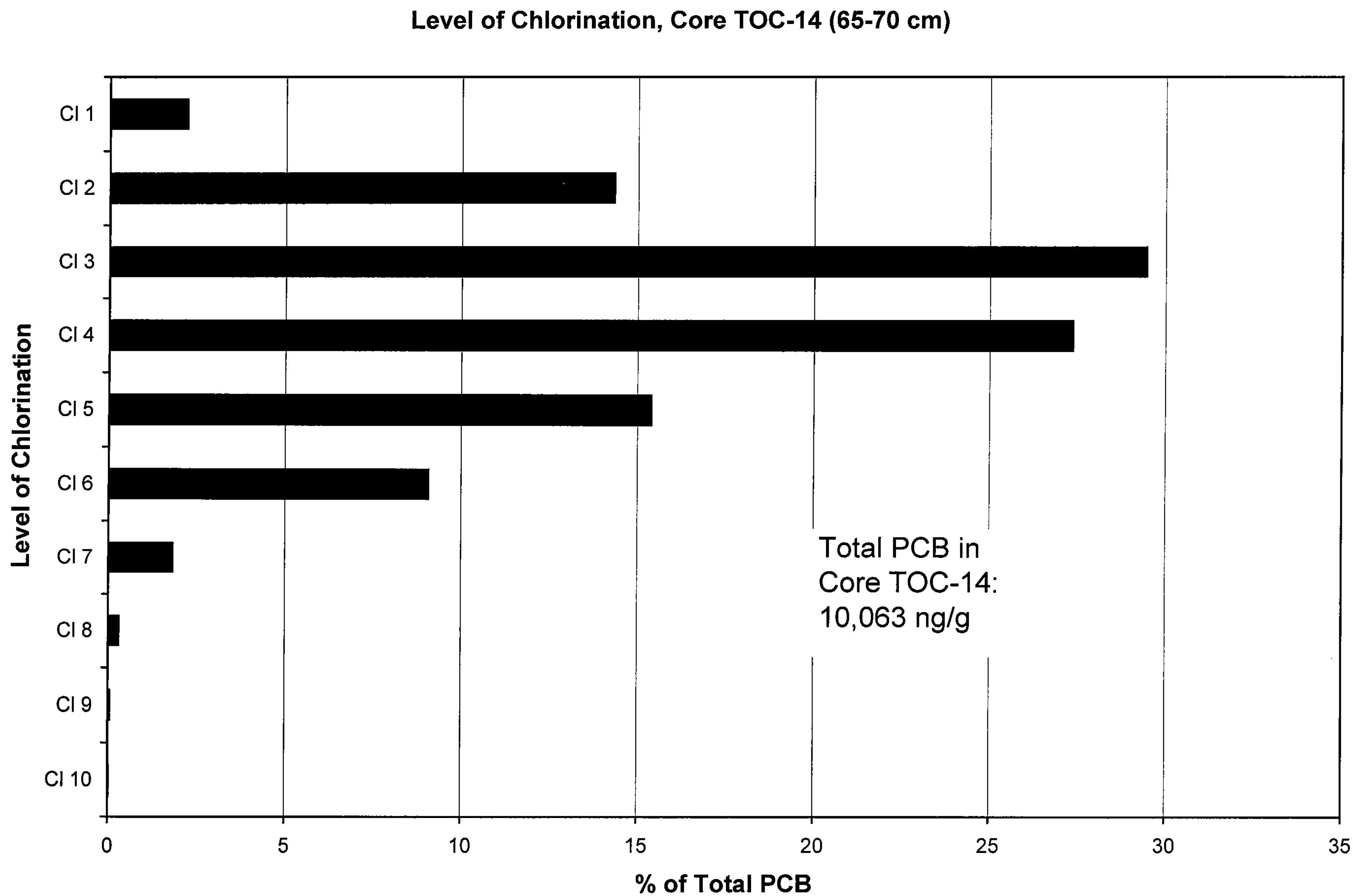

Level of Chlorination, Core TOC-11 (50-55 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOC-11:
1,371 ng/g

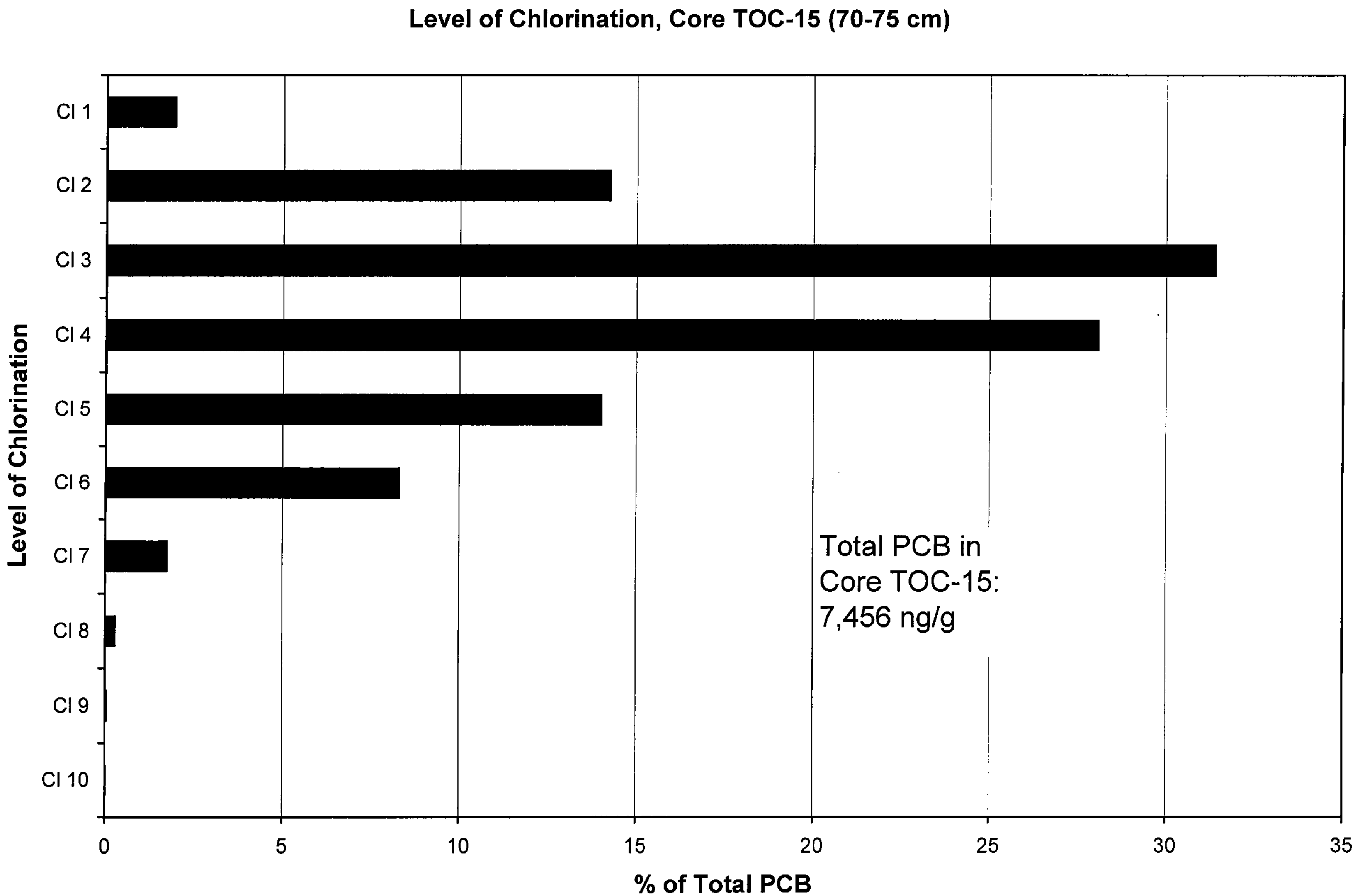


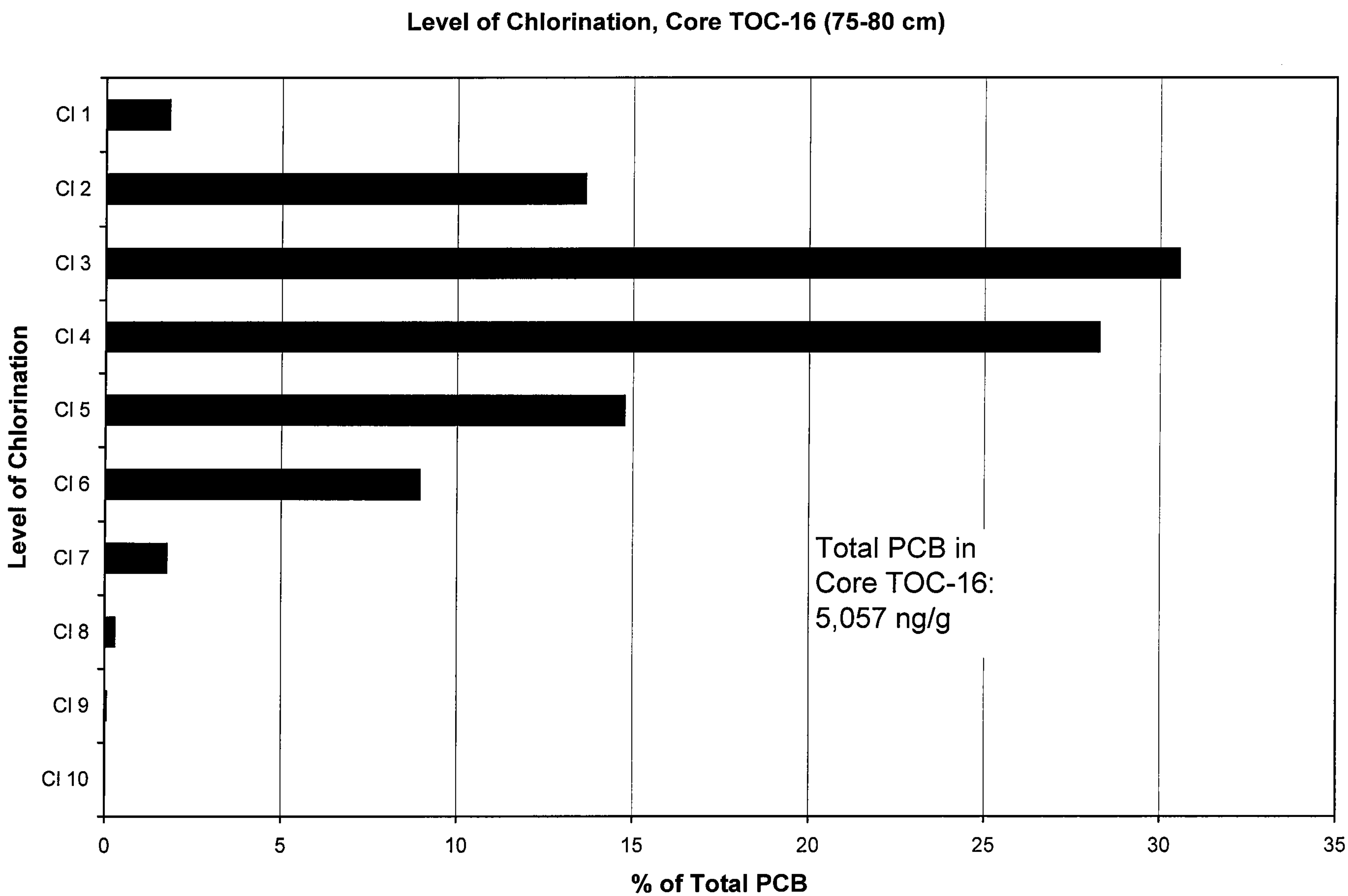
Level of Chlorination, Core TOC-12 (55-60 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOC-12:
6,711 ng/g

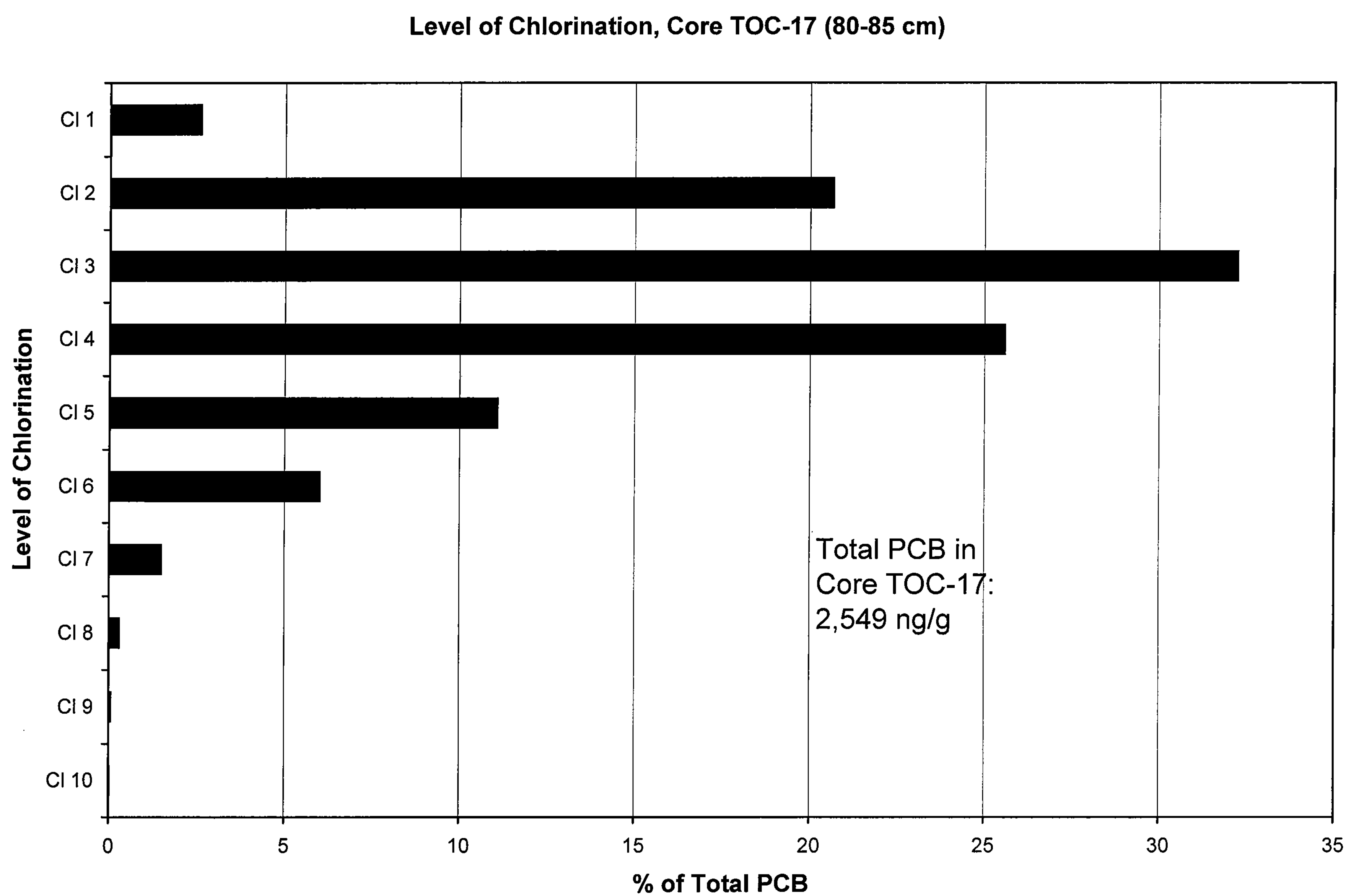


Level of Chlorination, Core TOC-13 (60-65 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
Total PCB in
Core TOC-13:
9,536 ng/g
0
5
10
15
20
25
30
% of Total PCB

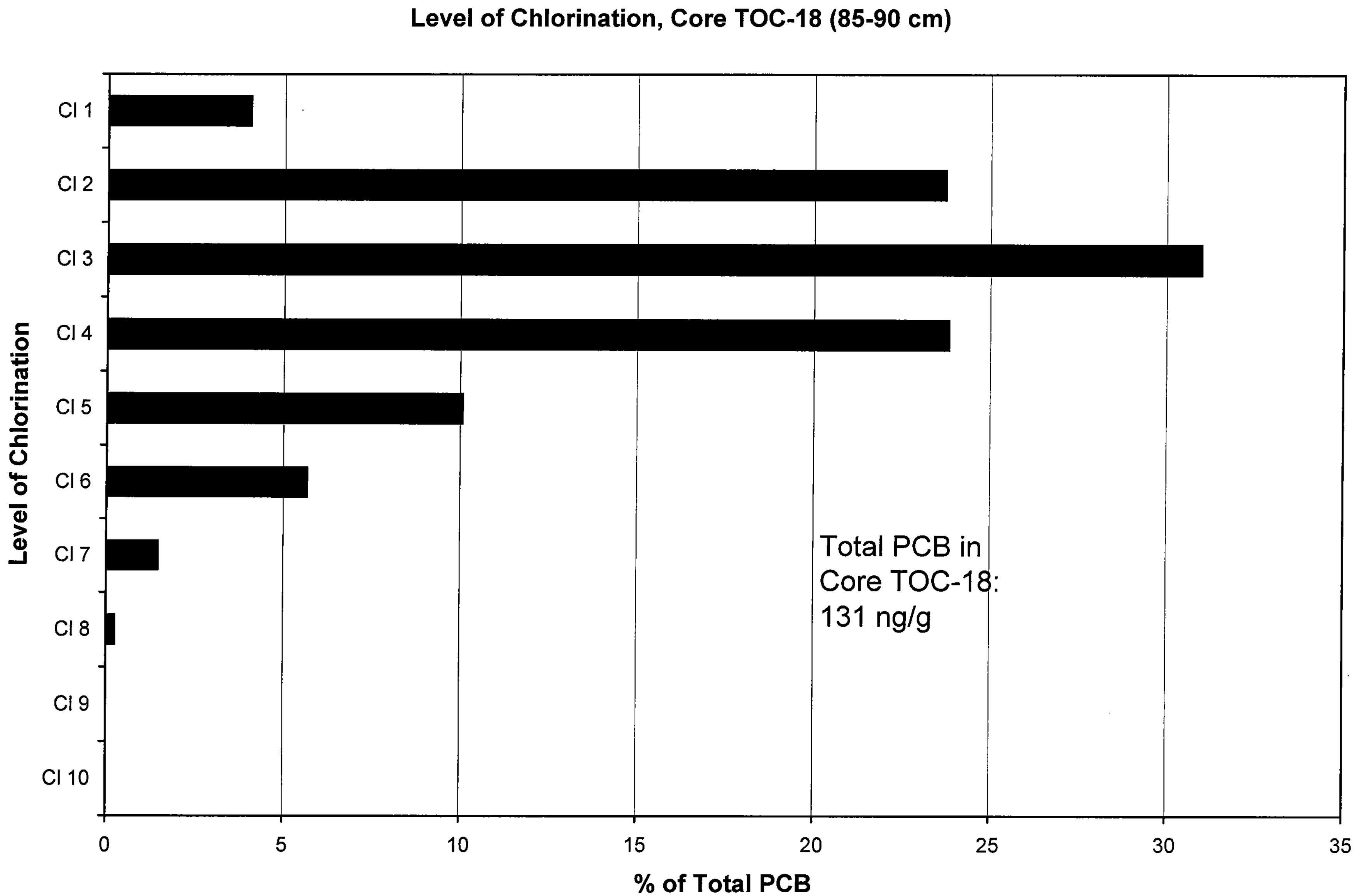

Level of Chlorination, Core TOC-14 (65-70 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOC-14:
10,063 ng/g


Level of Chlorination, Core TOC-15 (70-75 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOC-15:
7,456 ng/g

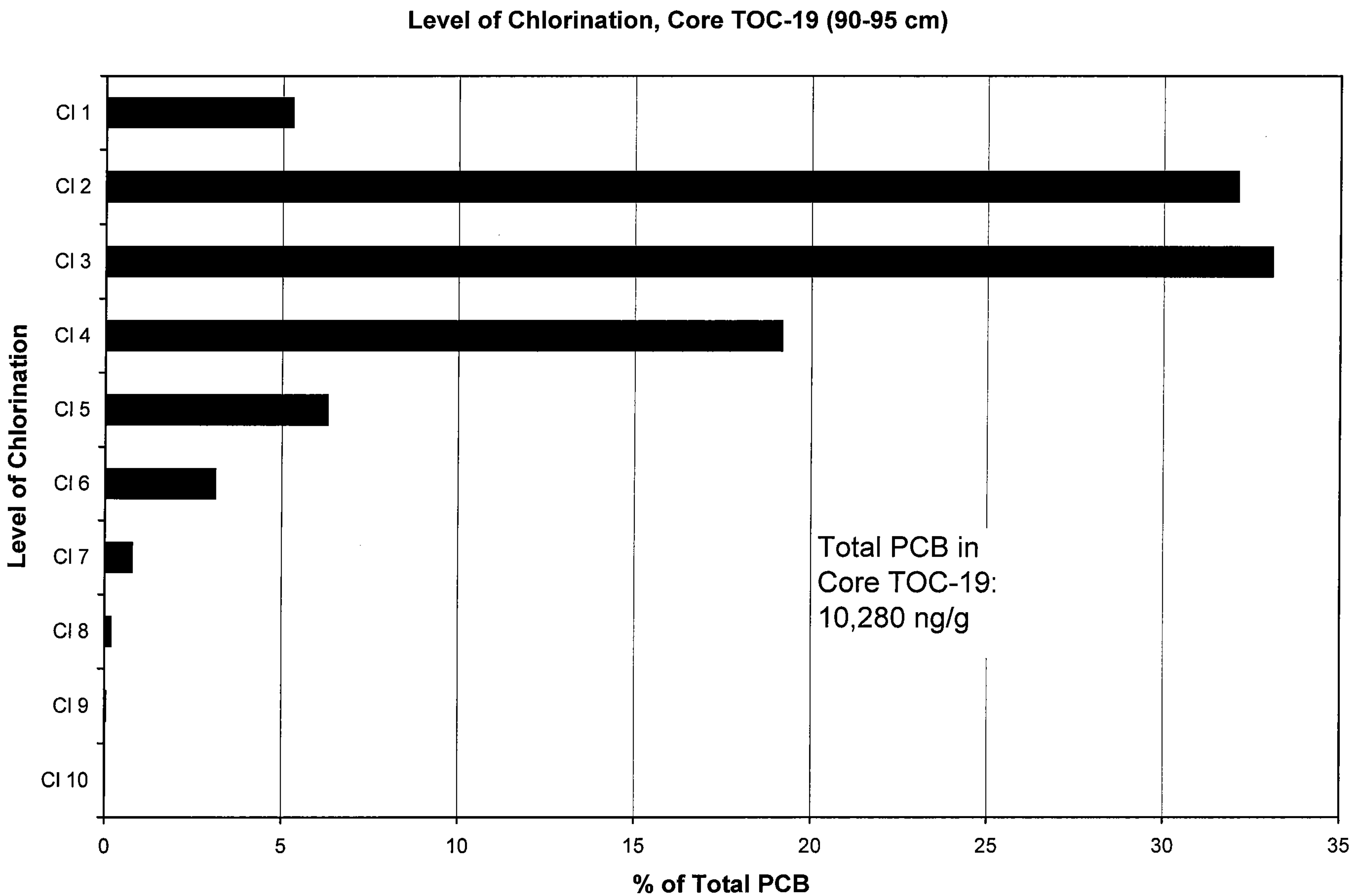

Level of Chlorination, Core TOC-16 (75-80 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOC-16:
5,057 ng/g

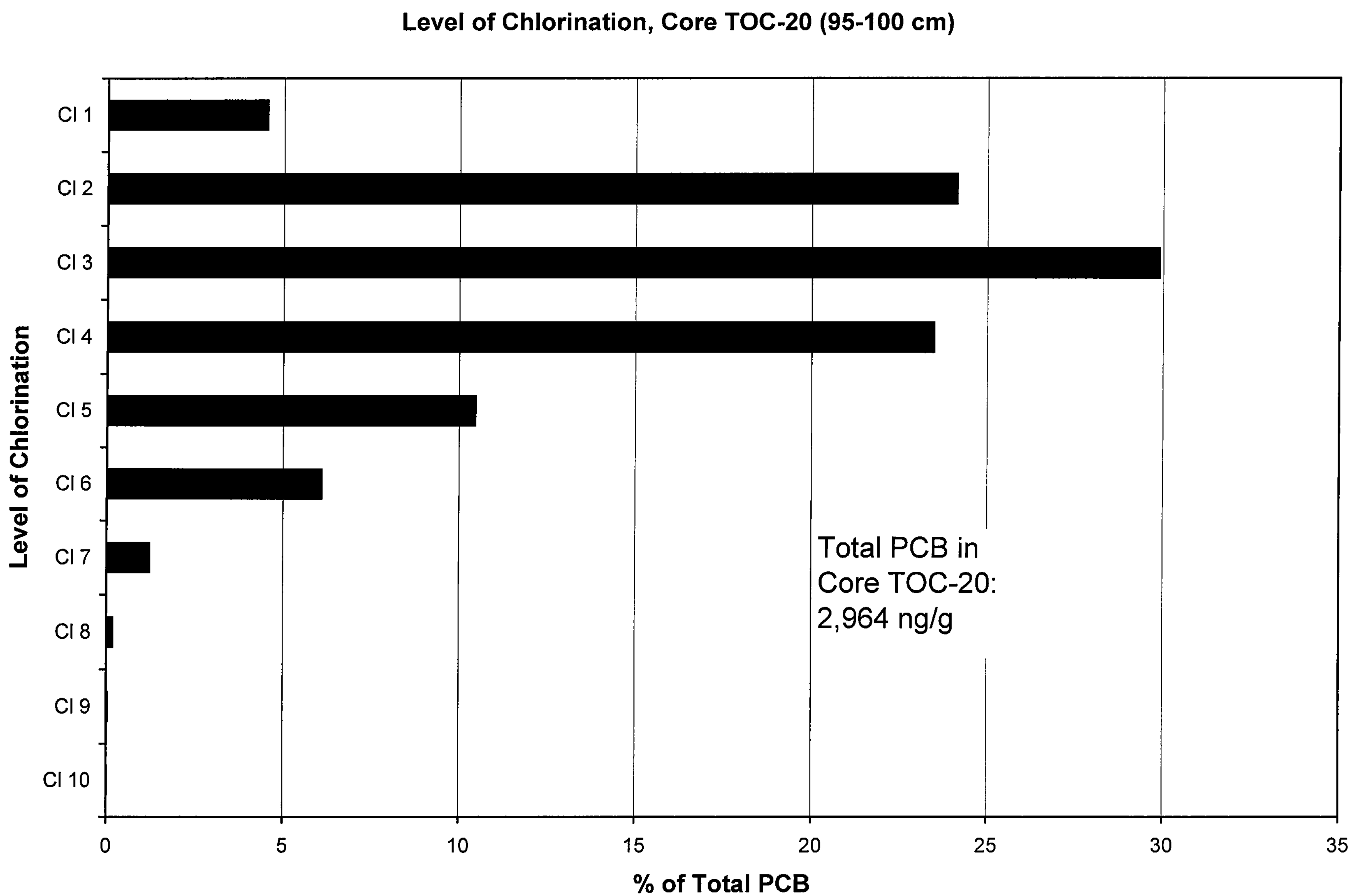


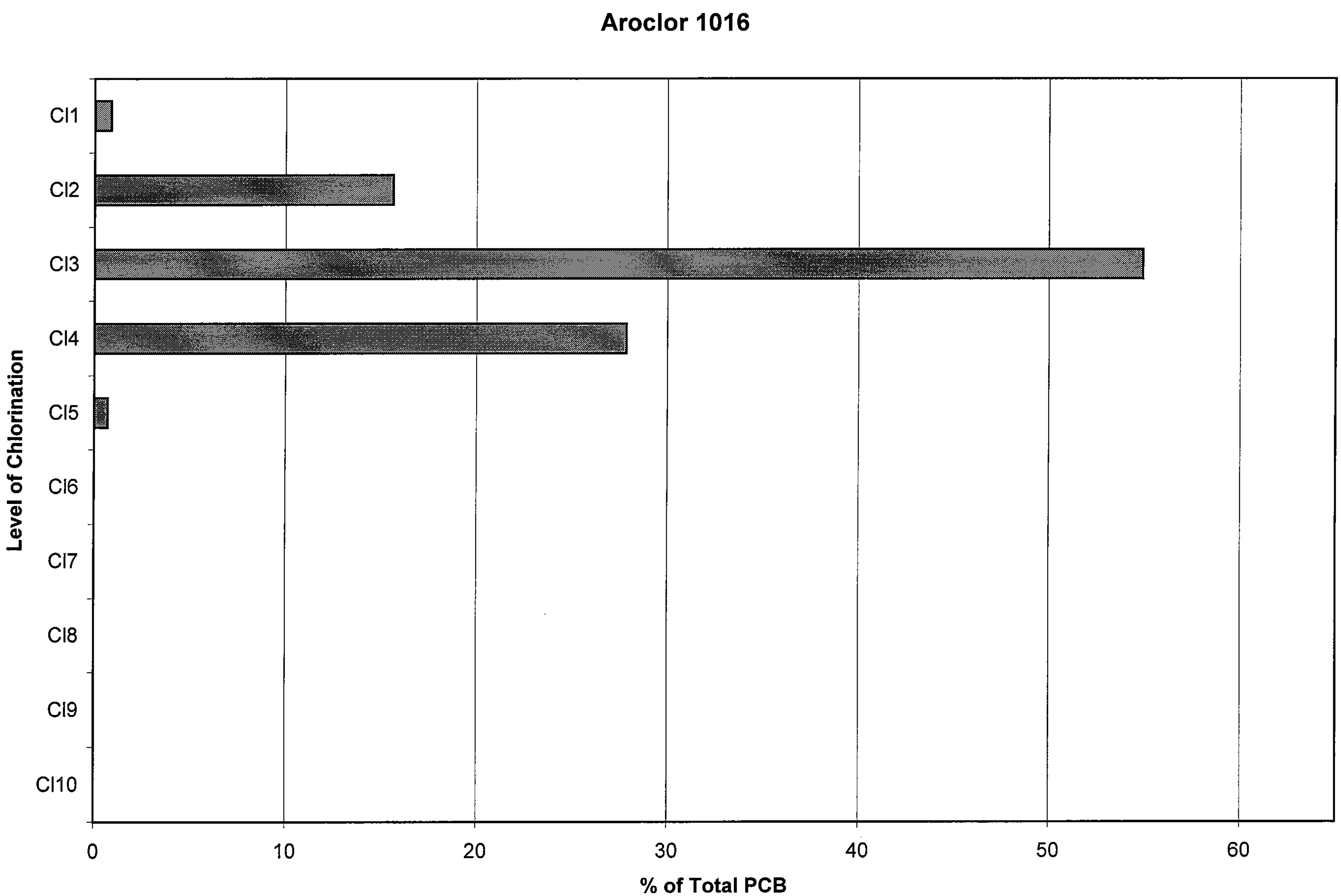
Level of Chlorination, Core TOC-17 (80-85 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOC-17:
2,549 ng/g



Level of Chlorination, Core TOC-18 (85-90 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOC-18:
131 ng/g

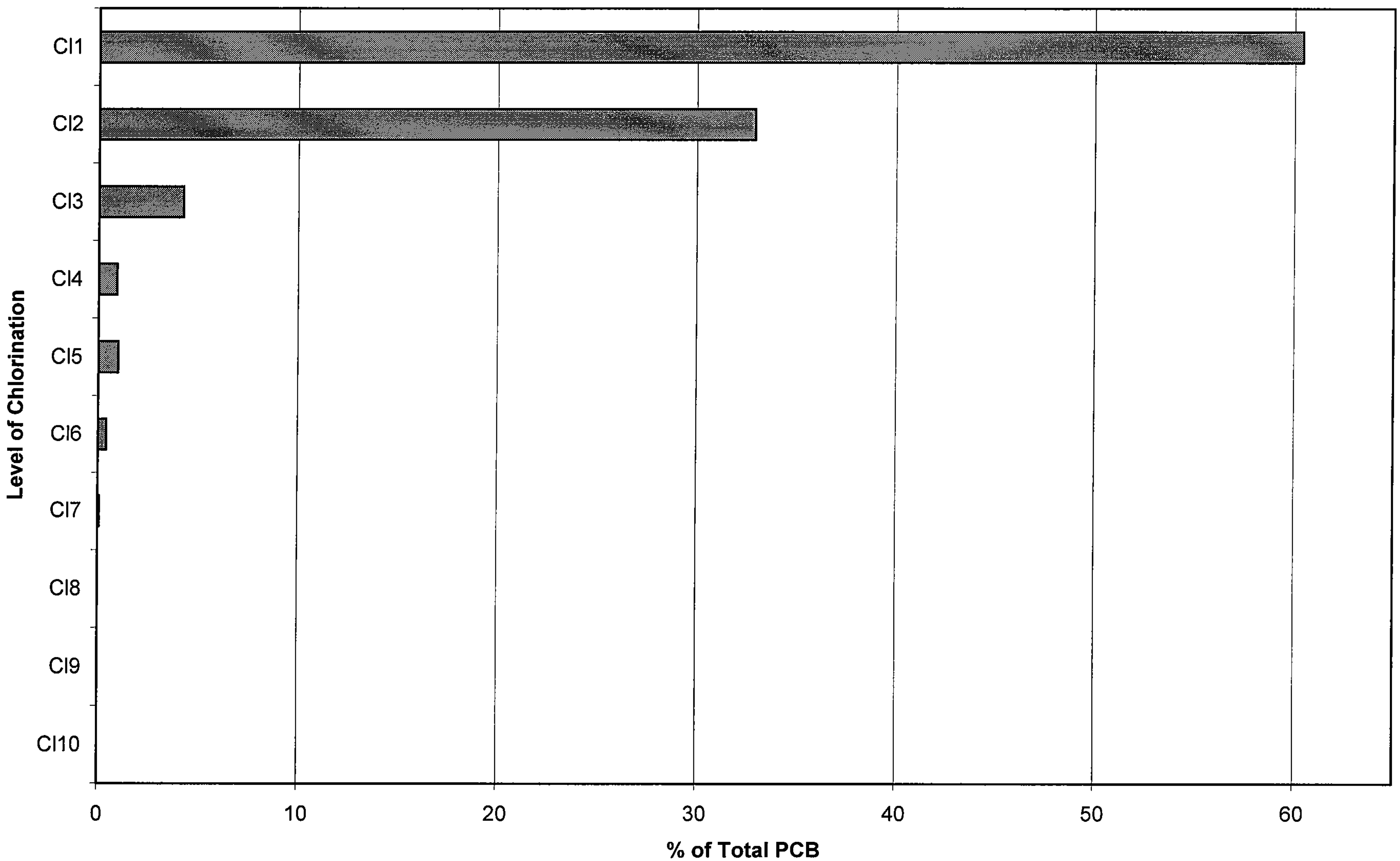

Level of Chlorination, Core TOC-19 (90-95 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOC-19:
10,280 ng/g

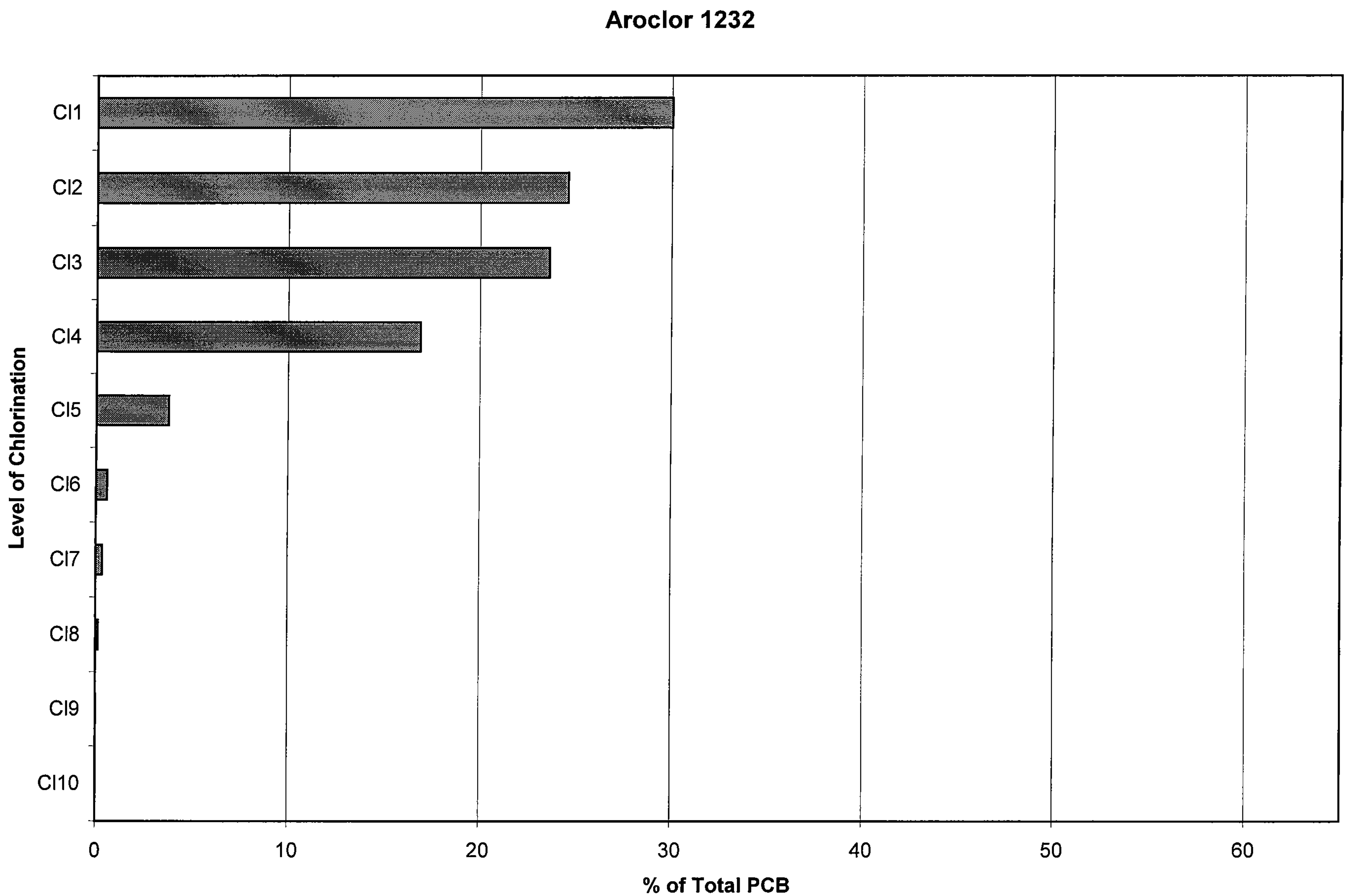

Level of Chlorination, Core TOC-20 (95-100 cm)
Level of Chlorination
Cl 1
Cl 2
Cl 3
Cl 4
Cl 5
Cl 6
Cl 7
Cl 8
Cl 9
Cl 10
0
5
10
15
20
25
30
35
% of Total PCB
Total PCB in
Core TOC-20:
2,964 ng/g



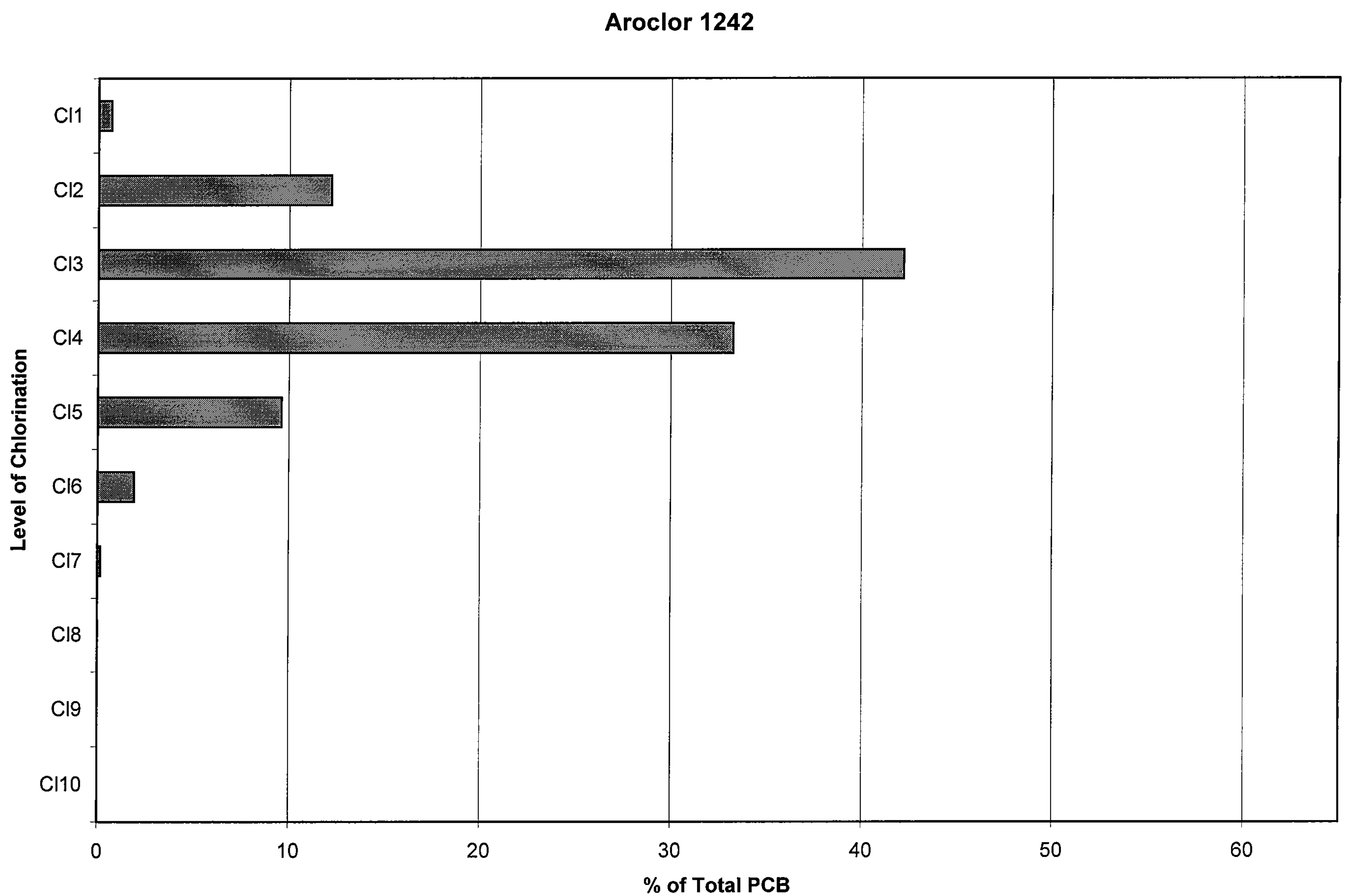
Aroclor 1016
Level of Chlorination
Cl1
Cl2
Cl3
Cl4
Cl5
Cl6
Cl7
Cl8
Cl9
Cl10
0
10
20
30
40
50
60
% of Total PCB

Aroclor 1221

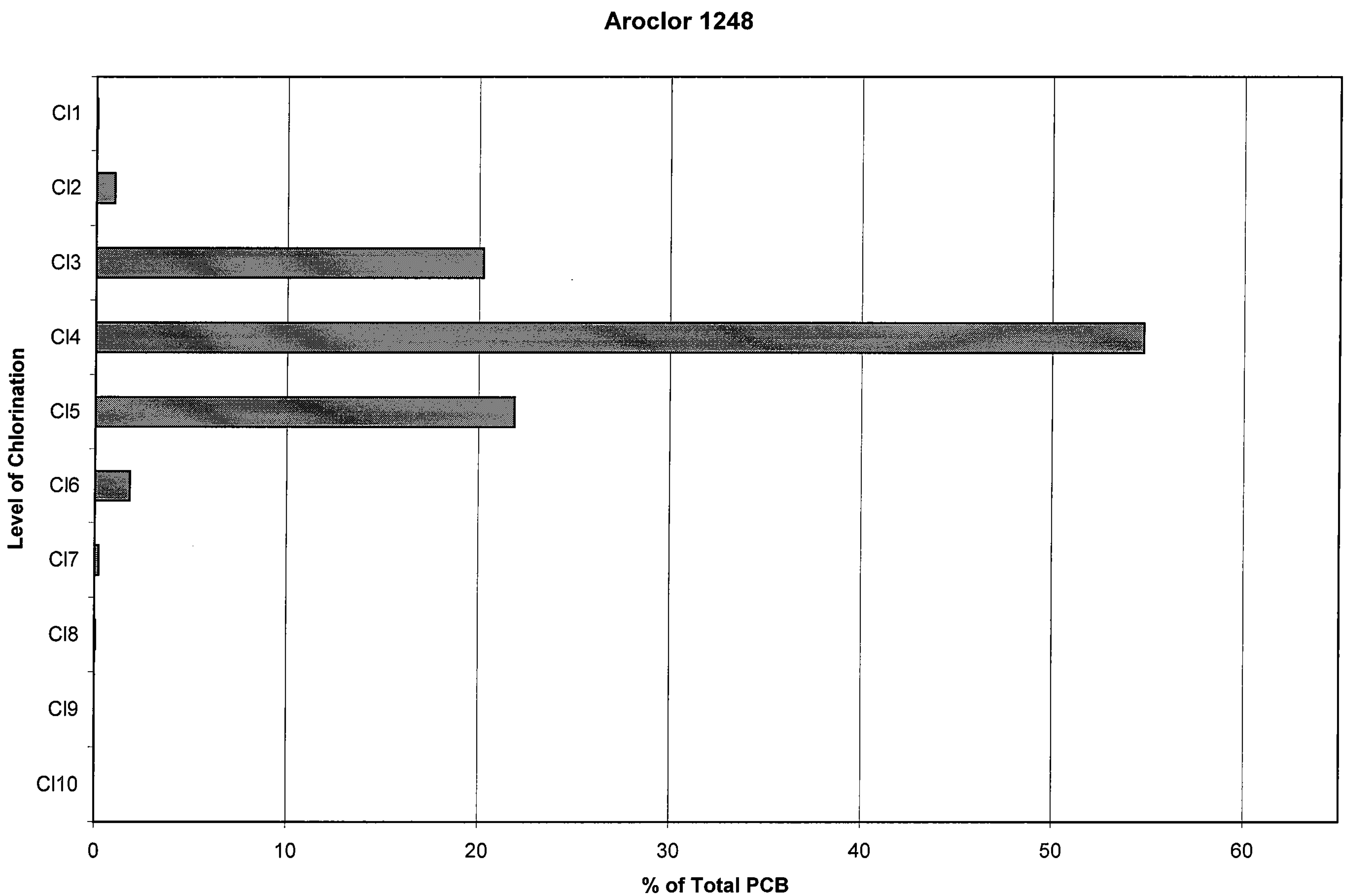


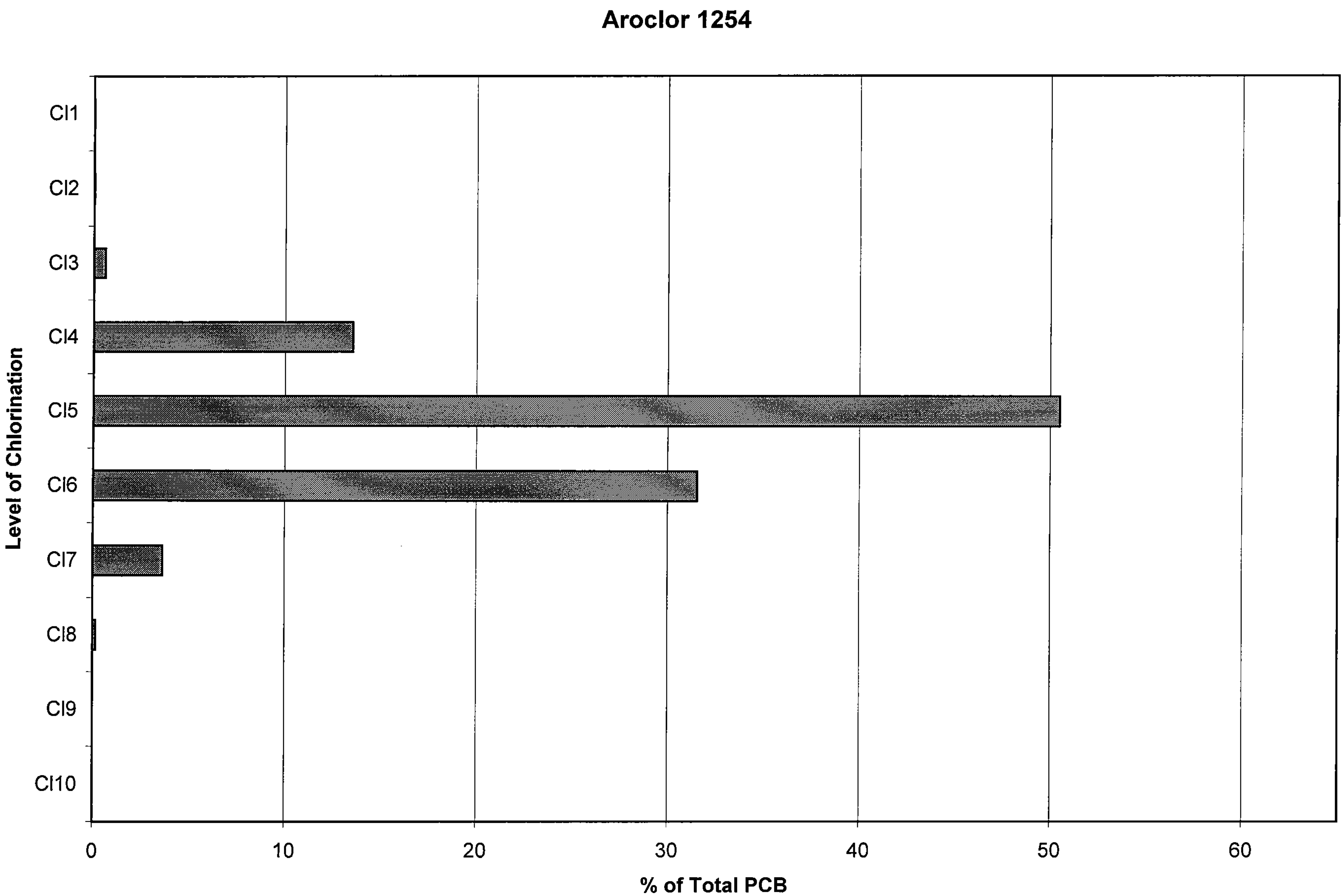


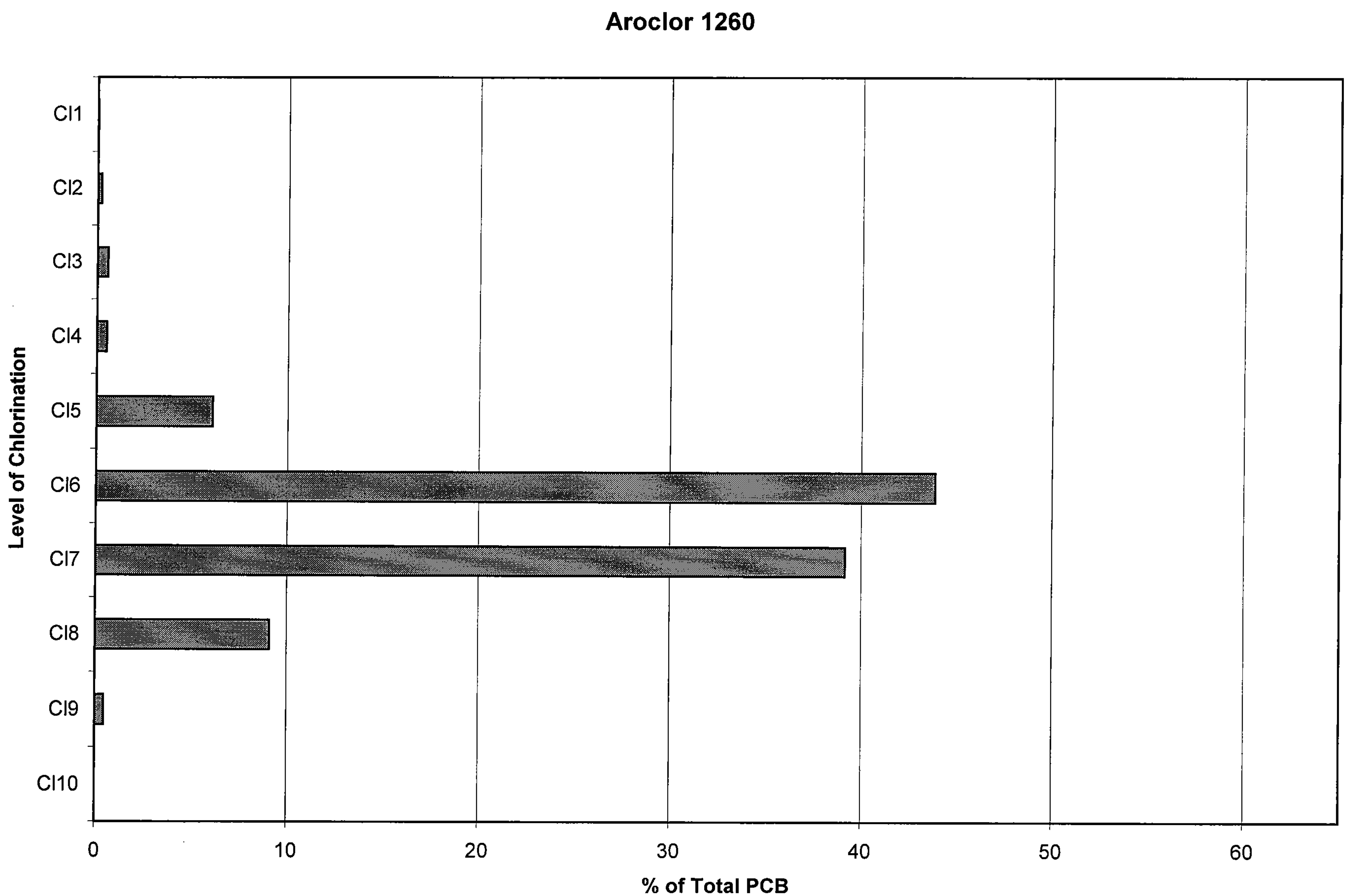
Aroclor 1232
Level of Chlorination
Cl1
Cl2
Cl3
Cl4
Cl5
Cl6
Cl7
Cl8
Cl9
Cl10
0
10
20
30
40
50
60
% of Total PCB



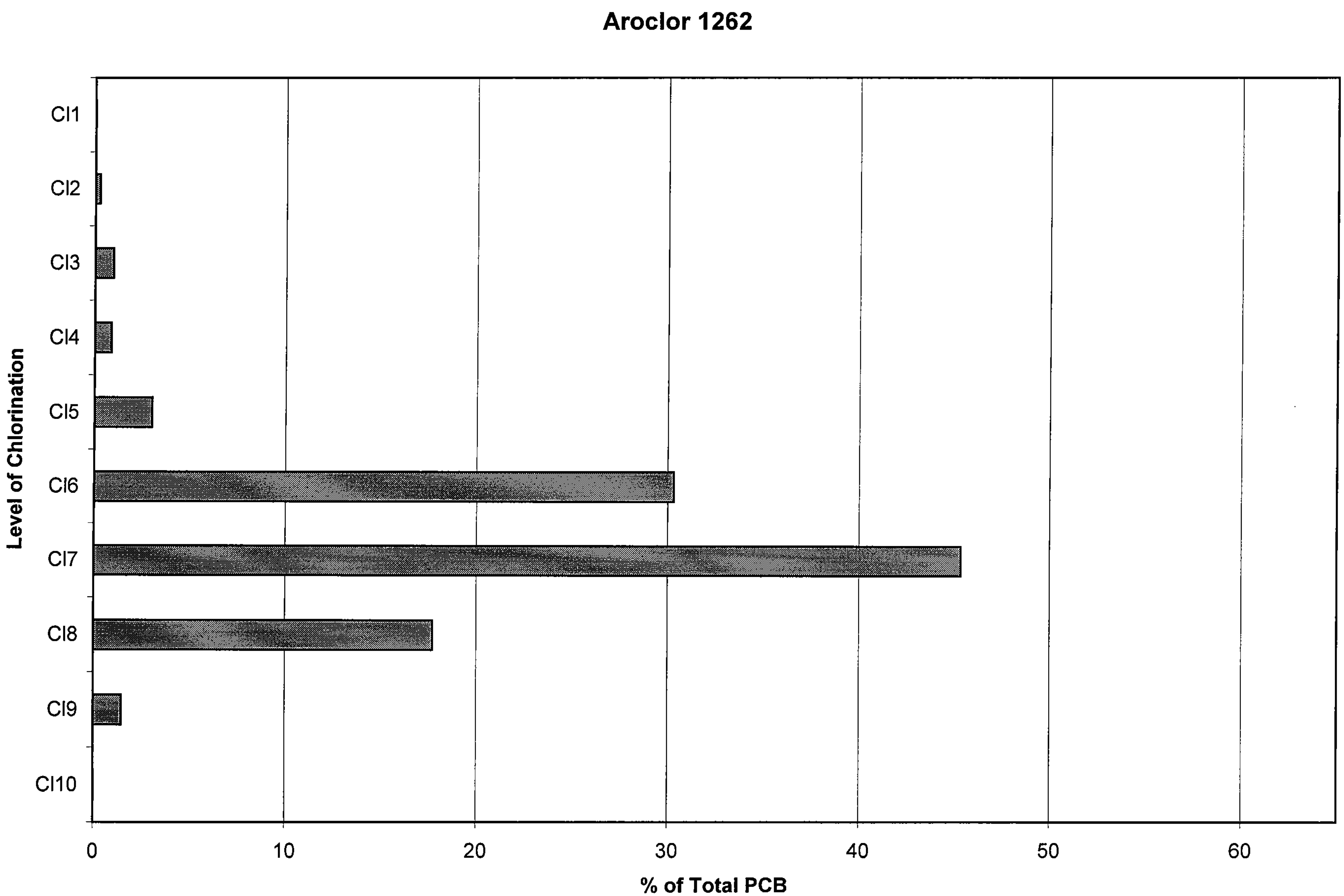
Aroclor 1242
Level of Chlorination
Cl1
Cl2
Cl3
Cl4
Cl5
Cl6
Cl7
Cl8
Cl9
Cl10
0
10
20
30
40
50
60
% of Total PCB


Aroclor 1248
Level of Chlorination
Cl1
Cl2
Cl3
Cl4
Cl5
Cl6
Cl7
Cl8
Cl9
Cl10
0
10
20
30
40
50
60
% of Total PCB

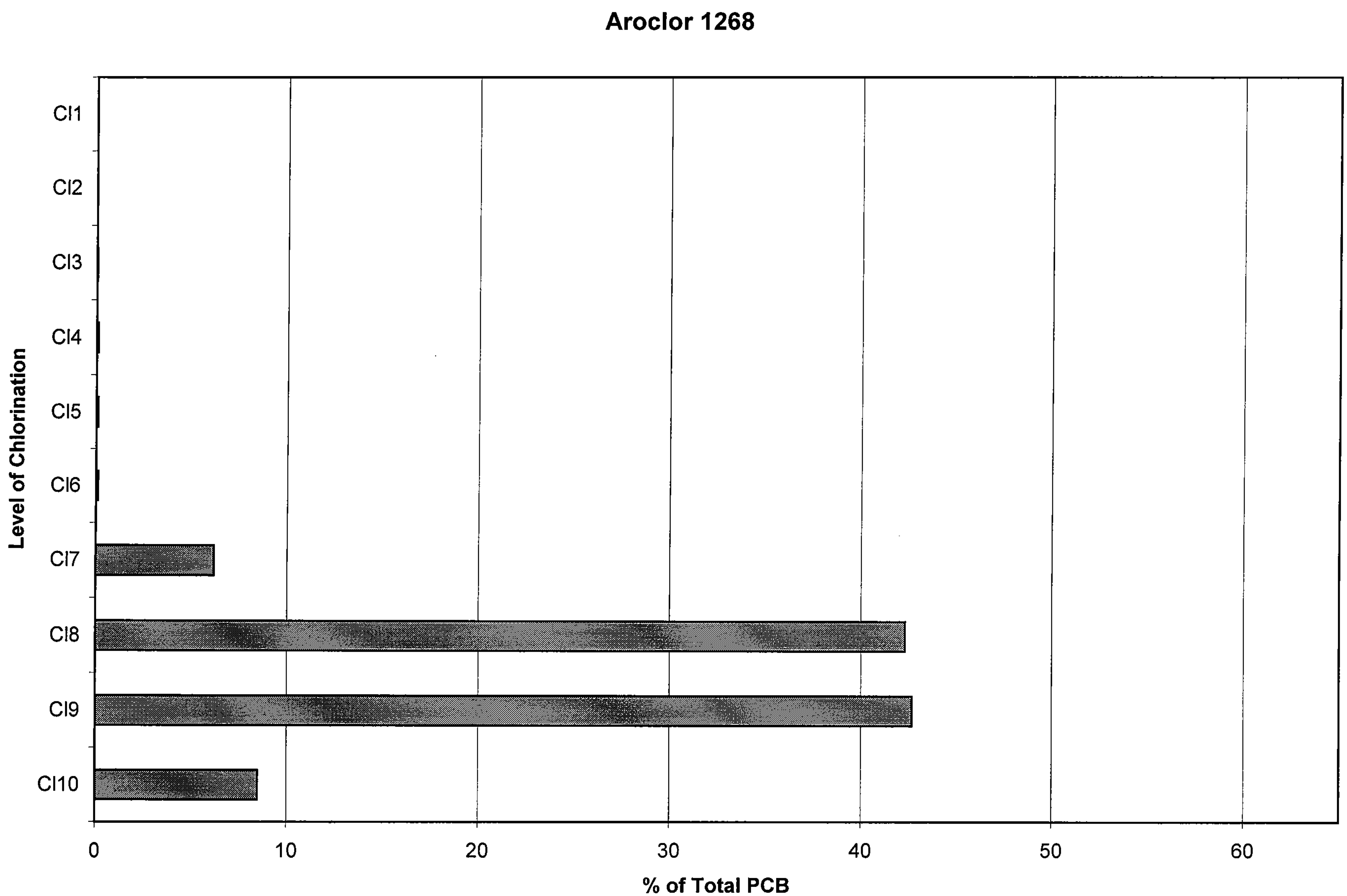

Aroclor 1254
Level of Chlorination
Cl1
Cl2
Cl3
Cl4
Cl5
Cl6
Cl7
Cl8
Cl9
Cl10
0
10
20
30
40
50
60
% of Total PCB



Aroclor 1260
Level of Chlorination
Cl1
Cl2
Cl3
Cl4
Cl5
Cl6
Cl7
Cl8
Cl9
Cl10
0
10
20
30
40
50
60
% of Total PCB

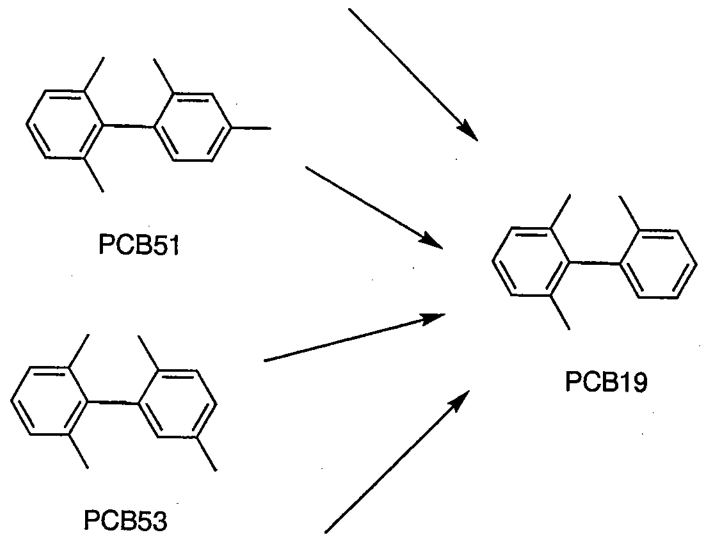


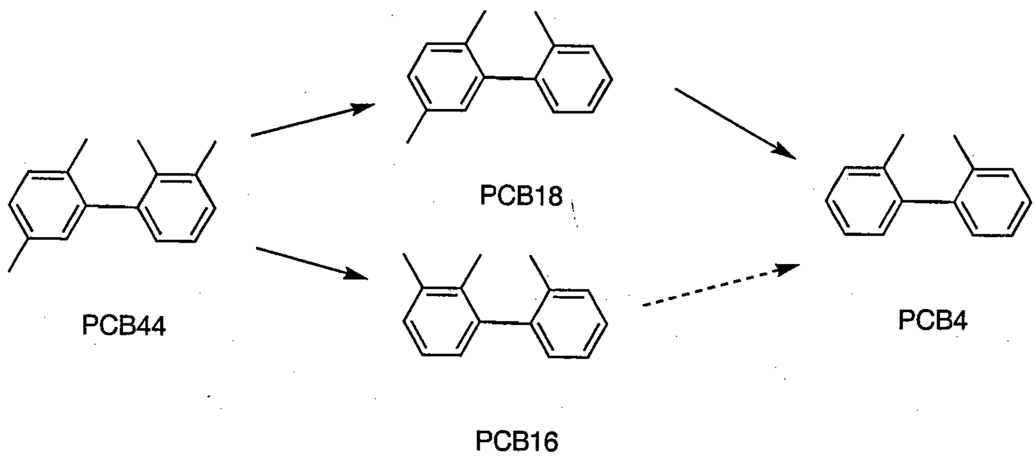
Aroclor 1262
Level of Chlorination
Cl1
Cl2
Cl3
Cl4
Cl5
Cl6
Cl7
Cl8
Cl9
Cl10
0
10
20
30
40
50
60
% of Total PCB

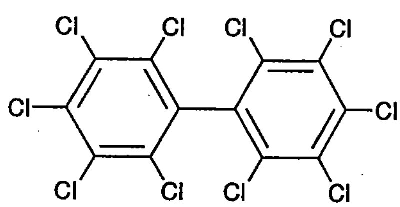

Aroclor 1268
Level of Chlorination
Cl1
Cl2
Cl3
Cl4
Cl5
Cl6
Cl7
Cl8
Cl9
Cl10
0
10
20
30
40
50
60
% of Total PCB

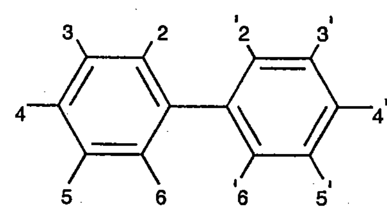
APPENDIX H

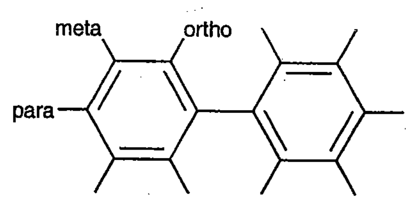
MOLECULAR STRUCTURES OF KEY PCB CONGENERS INVOLVED IN DECHLORINATION PROCESSES


PCB51
PCB53
PCB19

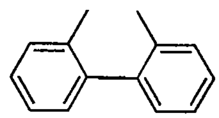

PCB18
PCB44
PCB4
PCB16


Cl
Cl
Cl
Cl
Cl
Cl
Cl
Cl
Cl
Cl

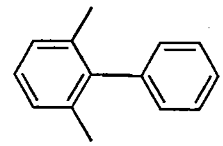

3
2
2'
3'
4
4'
5
6
6'
5'


meta
ortho
para

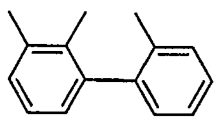
PCB Congeners with Increases in Concentrations Due to Dechlorination
(dechlorination products)



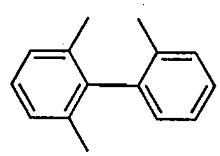
PCB4



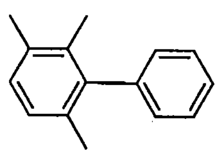
PCB10



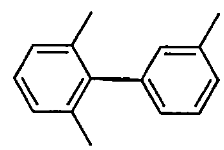
PCB16



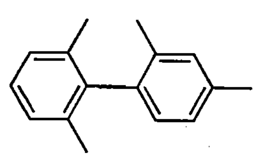
PCB19



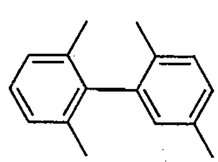
PCB24



PCB27

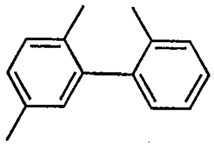


PCB51

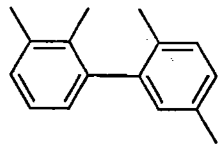


PCB53

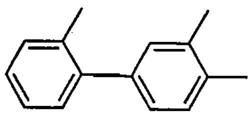
PCB Congeners with Decreases in Concentrations Due to Dechlorination



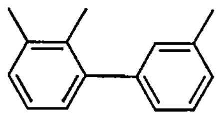
PCB18



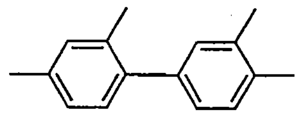
PCB44



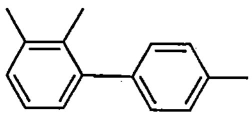
PCB33



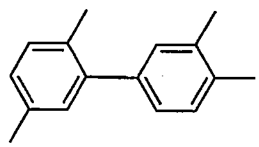
PCB20



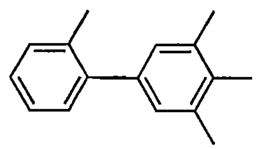
PCB66



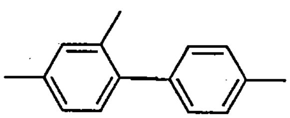
PCB22



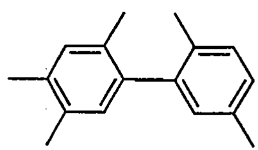
PCB70



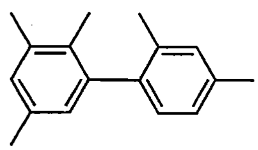
PCB76



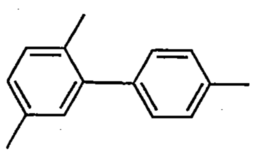
PCB28



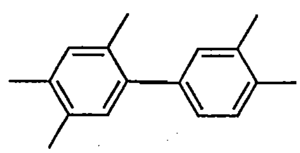
PCB101



PCB90



PCB31



PCB118